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Mr. Dorden

ROYAL COMMISSION

ON

ENERGY

HEARINGS

HELD AT

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ROYAL COMMISSION

ON

ENERGY

Hearings held at Toronto,
commencing Wednesday,
July 2, 1958, at 10.00 a.m.

PRESENT:

| | |
|-----------------------------|----------|
| Mr. H. Borden, C.M.G., Q.C. | Chairman |
| Mr. J. L. Levesque | Member |
| Mr. G. E. Britnell | Member |
| Dr. R. D. Howland | Member |
| Mr. L. J. Ladner, Q.C. | Member |
| Dr. R. M. Hardy | Member |

COMMISSION COUNSEL:

Mr. A. S. Pattillo, Q.C.
Mr. Miles H. Patterson

| | |
|---------------------|--|
| Mr. J. F. Parkinson | Secretary to the Commission |
| Major N. Lafrance | Assistant Secretary to the Commission |



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EXHIBITS

| <u>NO.</u> | | <u>PAGE</u> |
|------------|--|-------------|
| T-9-1 | Document entitled "Procedure for Determining Exportable Volumes of Gas". | 7164 |
| T-9-2 | Submission of the British American Oil Company Limited | 7164 |
| T-9-3 | Submission of Cities Service Oil Company Limited | 7226 |
| T-9-4 | Reply to questionnaire, the Shell Oil Company of Canada Limited. | 7256 |
| T-9-5 | Submission by Mr. Cyril T. Young. | 7280 |



Wednesday,
July 9, 1958.

---On resuming at 10.00 a.m.

Submission of

THE BRITISH AMERICAN OIL COMPANY LIMITED

APPEARANCES:

Mr. E.D. Loughney - Senior Vice-President
Mr. D.L. Campbell - Senior Vice-President,
British American Oil
Mr. S.J. Anderson - Staff Engineering Adviser
Mr. J.R. Yarnell - Treasurer
Mr. W.R. Sinclair - Counsel, Production and
Pipeline Department

THE CHAIRMAN: The Commission will now
resume its hearing. Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman.
This morning, Mr. Chairman, we are going to begin
with a submission of the British American Oil
Company Limited. Mr. Loughney and his group are
here, and at our request, made in Calgary in the
month of February, the company has spent a good
deal of time in the preparation of a suggested
formula to be used in whether or not there is gas
at any time available for export in Canada. I
would like to have that part of the submission
marked as T-9-1.

Then we have a further submission which



deals with the company's views on the policies which would best serve the national interest in relation to export of energy and the problems arising out of regulation and the extent of the authority that might be invested in an energy board, and that is contained in a red-covered binder, and I am asking that it be marked as T-9-2.

Mr. Patterson is going to do the questioning of the witnesses following their submission. Would you please proceed with the gas formula first, Mr. Loughney?

---EXHIBIT NO. T-9-1: Document entitled
"Procedure for Determining
Exportable Volumes of Gas".

---EXHIBIT NO. T-9-2: Submission of the British
American Oil Company Limited.

MR. LOUGHNEY: Thank you, Mr. Pattillo.

THE CHAIRMAN: Would you introduce your colleagues, Mr. Loughney?

MR. LOUGHNEY: Yes. Assisting me in the first part of our presentation, on my right Mr. D.L. Campbell, senior vice-president, British American Oil; Mr. S.J. Anderson, staff engineering adviser; Mr. J.R. Yarnell and Mr. W.R. Sinclair.

Procedure for Determining Exportable
Volumes of Gas: This memorandum describes a recommended procedure for determining volumes of

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gas surplus to Canadian and authorized export requirements.

As stated in British American's submission to the Royal Commission on Energy, it is our opinion that the policy that will best serve the national interest in relation to the export of gas, is one permitting the immediate export of quantities determined to be surplus to the foreseeable needs of Canada. It was further stated in the Company's submission that surplus quantities should be determined by relating future requirements to future reserve trends.

Trends in the Growth of Reserves: It is suggested that reserve trends be established from data made available annually by such authoritative sources as the Alberta Oil and Gas Conservation Board and the Canadian Petroleum Association. These data, when reviewed on a consistent basis, should provide a sound framework from which to develop reserve growth trends.

We would suggest that corresponding cumulative gas production figures for Canada should also be recorded on an annual basis, so that cumulative original or virgin reserves can be determined.

We are of the opinion that a projection of future reserve growth as at a particular date should be based on an examination of the industry's experience over the previous five year period, subject to revision each year, as new reserve data become available. An



examination of reserve changes over too short a period, for example, one or two years, or too long a period, 15 to 20 years, is not considered diagnostic for this purpose.

Trends in the Growth of Demand: Similarly, a demand forecast for five years should be prepared and revised each year. Estimates for this purpose should be available from certain provincial authorities and from gas transmission and distribution companies serving Canadian markets. It will be necessary to add to Canadian needs the annual requirements of authorized export permits in order to arrive at a total estimated annual consumption figure. Export permits are granted as a total volume and remain fixed once they are authorized. In this procedure it is not intended that these authorized volumes be reduced following an annual review of supply and demand.

Necessary Retained Reserve: For financing and other purposes it is generally required that pipe line companies have under contract initially, gas supplies sufficient to meet expected consumption rates for a period of approximately 20 to 25 years. So that Canadian needs can always be protected, we are of the opinion that pipe line purchasers and utility companies should review annually their gas reserve requirements in relation to demand, and from time to time, place additional volumes of gas under contract to meet expected increases in consumption. If, during the



course of such annual reviews, it becomes apparent that a pipe line serving Canadian markets has not sufficient reserves under contract to meet 20 to 25-year needs, the pipe line should be directed to secure the necessary additional volumes of gas. In this way the ratio of gas supply to demand existing at the outset of operations could be continuously maintained.

To the volume of gas necessary to meet future Canadian requirements there should be added the remaining quantity of gas already authorized for export. This total quantity we have defined as the necessary retained reserve.

Reserves that exist at a particular date in excess of the necessary retained reserve should be considered as available for export.

Procedure for Determining Exportable Volumes of Gas: Our procedure for computing, at any time, the gas available for export is to deduct from the estimated remaining reserve five years hence the necessary retained reserve at that date. Three methods of estimating future remaining reserves have been used for illustrative purposes.

A graphical method of computing the various quantities of gas available for export at January 1, 1958 is shown in Figure I. The statistical data employed in this memorandum have been derived from the same reference material used in British American's



earlier submission, and is summarized on Table I.

The procedure followed in plotting Figure I has been as follows:-

1. Future cumulative reserve growth over the next five years has been projected on the basis of 1 T.C.F. per year (minimum for any one year in the past five), 2.71 T.C.F. per year (average for past five years) and 1.86 T.C.F. per year (average of the three lowest of the past five years).
2. The cumulative consumption forecast of Canadian needs and presently authorized export has been plotted for the same five year period.
3. Cumulative consumption has been subtracted from the cumulative reserve to obtain the future remaining reserve.
4. The necessary retained reserve, (calculated for this purpose at 25 years supply at current consumption rates) has been plotted for each year of the five year period.
5. At the end of the five-year period, the necessary retained reserve has been subtracted from the remaining reserve to arrive at the exportable surplus.



In view of the fact that estimates of future reserve growth and market requirements may change as reserve additions and market demand fluctuate from year to year, we are of the opinion that it would be prudent to use a future cumulative reserve projection based on the average of the reserve additions for the three lowest of the past five years. Pertinent data for the calculation of the exportable surplus on this basis at January 1, 1958, are as follows:-

- (a) The average reserve growth rate for the three lowest years out of the past five is 1.86 trillion cubic feet per year. This volume would be used to calculate the reserves discovered in the period 1958 to 1962 and would be added to the cumulative reserve at the end of 1957 thereby giving a future cumulative reserve at the end of 1962.
- (b) The remaining reserve at the end of 1962 would be the cumulative reserve at that time minus the cumulative consumption, or 30.82 trillion cubic feet.
- (c) At the end of 1962 the necessary retained reserve would be 17.35 trillion cubic feet.
- (d) Gas available for export is 13.47 trillion cubic feet.

The above calculation is shown graphically on Figure I.



During the past five years the minimum reserve added in any one year was 1.06 trillion cubic feet in 1954, while the maximum addition was 4.73 trillion cubic feet in 1953.

As a matter of interest we have calculated the exportable surplus if the future reserve growth rate is assumed to be one trillion cubic feet per year, comparable to the 1954 rate which was the lowest yearly addition during the past five year period. This exportable surplus amounts to 9.17 trillion cubic feet compared to 13.47 trillion cubic feet if the lowest three out of five years are used and 17.72 trillion cubic feet if the past five year average or growth trend rate is applied. We feel that the intermediate case represents a realistic method for determining the exportable surplus at any time.

The pressing need of the industry today is for a clarification of gas export policy, rather than a precise determination of exportable surpluses, so that exploration and development work may proceed without delay. We expect that the adoption of a gas export policy and this recommended procedure for determining exportable surpluses, will enable the industry to proceed, in an orderly manner, with the development of Canada's vast potential natural gas reserves.

MR. PATTILLO: I think perhaps we will have the statement read too before we address any questions.

TABLE I

DATA FOR GRAPH ILLUSTRATING PROCEDURE FOR
DETERMINING EXPORTABLE QUANTITIES OF GAS

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|----------------------|--------------------|----------------------------------|--|--|--|---|---|
| Canadian TCF/Year | Export TCF/Year | Consumption Total TCF/Year | Cumulative TCF | Reserves - (2.71 TCF/Yr. Avg. Growth) | Determination of Necessary Retained Reserves (25 Yr. Canadian Supply + Remaining Authorized Reserves) | Canadian Supply Col. (1) x 25 TCF | Authorized Export 4.52 TCF (Existing Permits) - Col. (2) TCF |
| .18 | - | .18 | 1.01 1.10 1.22 1.37 1.51 1.70 | 12.53 17.26 18.32 21.60 24.75 26.11 | 11.52 16.16 17.10 20.23 23.24 24.41 | 4.51 | 4.52 |
| .23 | .13 | .36 | 2.06 | 28.82 | 26.76 | 5.75 | 4.39 |
| .32 | .19 | .51 | 2.57 | 31.53 | 28.96 | 8.00 | 4.20 |
| .40 | .20 | .60 | 3.17 | 34.24 | 31.07 | 10.00 | 4.00 |
| .47 | .20 | .67 | 3.84 | 36.95 | 33.11 | 11.75 | 3.80 |
| .55 | .20 | .75 | 4.59 | 39.66 | 35.07 | 13.75 | 3.60 |
| | | | | | | | 9.03 |
| | | | | | | | 12.11 |
| | | | | | | | 13.25 |
| | | | | | | | 14.40 |
| | | | | | | | 15.55 |
| | | | | | | | 16.70 |



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MR. LOUGHNEY: I would like to ask Mr. Sinclair to read the next statement, please.

MR. SINCLAIR: The Royal Commission on Energy has requested The British American Oil Company Limited to present a submission with respect to the matters mentioned in clauses (a) and (c) of the terms of reference of the Commission, insofar as they relate to the petroleum industry.

At the outset, we recognize that the task facing the Commission is difficult and complex, and that the problems involved have no easy solution.

There is agreement that it is essential to the best interests of Canada that her sources of energy be developed under a policy of maximum economic utilization, having regard to all elements of the national interest involved. No one questions the desirability of determining the principles and procedures to be applied in the administration of such aspects of an energy policy as fall within the jurisdiction of the Parliament of Canada. It is recognized that present and future requirements for energy should be fully and systematically taken into account in granting licenses for the export of energy or sources of energy.

The basic difficulty is the formulation of these principles in some detail and the development of practical procedures to put them



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into effect within the framework of the Canadian Constitution, with due regard to the rights and desires of Canada and of its provinces.

We feel that it is essential to consider carefully the nature of the problems with respect to oil and gas which have come to the Commission's attention during the course of the hearings so far. In this manner, answers to the questions raised by the terms of reference can be more readily found.

One of the most important problems that exists, and to which the Commission has devoted much of its time, is the need for further markets for gas and oil. This problem is not primarily related to these substances as sources of energy, but rather as commodities. We realize fully that the Commission is primarily concerned with oil and gas as energy sources. However, we believe that the questions of importance today arise from problems that relate to oil and gas as commodities rather than sources of energy. We believe that there are, and will continue to be in the foreseeable future, surpluses of oil and gas beyond the requirements of Canada. So long as this situation exists, marketing problems in respect to these commodities cannot be considered primarily in the light of their being sources of energy. For some considerable time, matters relating to the exportation and importation of



gas and oil must be viewed essentially in the light of Canada's overall trade policy. Any possible consideration of tariffs, embargoes and quotas cannot be isolated, but must be examined in the light of the best interests of the nation as a whole.

Considerable attention has been devoted to pipelines during the course of the Commission's hearings. We believe that oil and gas pipelines must be considered in the light of the service that they perform. They are essentially modes of transportation, and accordingly problems relating to them are essentially transportation problems involving considerations basically common to other forms of transportation.

Concern has been expressed that there is not readily available accurate statistical data as to the supply and consumption of gas and oil, which could serve as a basis for calculating Canada's future requirements for these substances. We believe that to the extent such an inadequacy exists, it can be remedied without undue difficulty.

Recognizing the vital part that oil and gas, both as sources of energy and as commodities, have now achieved in the national economy, we are concerned as to the extent to which the formulation and execution of policies with respect to these substances should be delegated to a Board or other agency.



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7174

We are firmly of the opinion that considerations relative to the administration of an energy policy, once determined, would affect so many interests that an agency of the federal government delegated this responsibility would be required to perform functions which we feel should more properly be exercised by Parliament or provincial legislatures. Aside from the constitutional limitations involved, we do not feel that these matters can be dissociated from considerations going beyond the energy aspects involved.

The hearings of the Commission have been extremely valuable in pointing out many of the problems, which can arise in the functioning of the oil and gas industry. It will generally be recognized that many of these problems developed out of situations that had arisen in Canada for the first time. It was perhaps inevitable that difficulties would arise, and that certain inconsistencies and gaps in legislation and its application would appear. We believe that these matters can essentially be handled by amendments to existing legislation, and by applying this legislation so as to anticipate the problems which have been shown to exist.



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We know that the Commission is well aware of the constitutional limitations involved, which are a matter of concern in nearly every phase of the problems under consideration, and their practical significance as pointed up by the submissions that have been made on behalf of several of the provincial governments. We have endeavoured to keep these complex constitutional limitations in mind in considering the terms of reference, as we are gravely concerned that the industry's efficiency and prospects may be seriously impaired if its operations should become involved in jurisdictional controversies.

It is in the light of all of the foregoing considerations that we turn to a more detailed examination of the individual terms of reference.

TERM OF REFERENCE "(a)"

The policies which will best serve the national interest in relation to the export of energy and sources of energy from Canada.

- (1) Crude Oil, Refined Products and Other Liquid Hydrocarbons.

In our opinion, the policy which will best serve the national interest in relation to the export of crude oil, refined products and other liquid hydrocarbons from Canada, is one that will enable these commodities to move freely in foreign commerce, and facilitate their reaching whatever



markets can be secured. Accordingly, so long as adequate supplies are available for Canadian needs, there should be no export duty on these products.

The machinery to ensure that these commodities are surplus to Canadian needs has been established by the Exportation of Power and Fluids and Importation of Gas Act, (S.C. 1955, c. 14) and the Regulations established thereunder, and we believe that the Department of Trade and Commerce can properly and adequately continue to handle this matter.

(2) Gas.

In its submission to the Commission in February, 1958, British American stated that in its opinion the policy that will best serve the national interest, in relation to the export of gas as an energy source, is one permitting the immediate export of quantities determined to be surplus to the foreseeable needs of Canada. British American further stated that the future requirements of Canada should be of paramount importance in determining the quantities of gas available for export.

In essence, we recommended that surplus quantities should be determined by relating future requirements to future reserve trends. We have worked out a procedure which, we believe,



can realistically be used to determine volumes of gas surplus to Canadian and authorized export requirements. The recommended procedure has already been furnished to the Commission.

When an application is made to export gas from Canada, we believe the following principles, which are not intended to be exhaustive, nor to cover all of the considerations involved, should also be followed:

(a) The licence should authorize the export of gas not to exceed a total cumulative volume during the life of the licence.

(b) (i) The licence should be for a fixed period of sufficient duration to reasonably enable the applicant to obtain the necessary authority to import the gas into the United States and to finance the construction of such facilities as may necessarily be involved.

(ii) In certain instances it may be desirable to consider the authorizing of the export of surplus quantities of gas for short periods of time. We would urge that a flexible policy be adopted so that advantage might be taken of special market outlets that might develop from time to time.

(iii) In the case of long term licences, the licensee, if he wished to renew the licence, must be obligated to apply for its renewal long in advance of its termination date. It must clearly



be the licensee's responsibility to make this application. The licensing authority should be required to advise the licensee promptly if the renewal will be granted, whether in whole or in part. If this procedure were adopted, it would enable the licensee to make other arrangements for the quantities of gas involved in the event a permit were not renewed, and would accordingly serve to prevent the occurrence of difficult situations which might otherwise arise when the licence terminated.

(iv) We would urge that a licence should not be revoked in the event of a breach of any of its terms or conditions unless the licensee, after due notice of any purported refusal or neglect, has not remedied the default within a reasonable time. (The licensee should first have had the right to request a hearing if it did not consider that it was in default.)

(c) Except in unusual circumstances, we do not believe that it is realistic to consider the end use to which the gas will be put, nor to impose any limitation as to such use as a condition of export. Aside from the obvious difficulties in enforcing such a condition, it would be impractical, if not impossible, to ascertain how the commodity was, in fact, finally consumed.

(d) We believe that it is proper for Canada to consider the price at which gas will be exported.



We believe that these matters can properly continue to be administered by the Department of Trade and Commerce under the provisions of the Exportation of Power and Fluids and Importation of Gas Act. We do not think that it will be a matter of practical difficulty for the Department to make the calculations required, provided, as we recommend later on, that broad policies relating to export have been laid down for its guidance, and accurate data is available from which trends in growth of reserves and consumption can be determined.

TERM OF REFERENCE "(b)"

The problems involved in, and the policies which ought to be applied to, the regulation of the transmission of oil and natural gas between provinces or from Canada to another country.

1. Oil Pipe Lines

The Commission is aware that the oil pipe line companies are in fact operating as common carriers, although they have not been declared to be so under the Pipe Lines Act of Canada nor under any provincial pipeline act.

British American believes that there are adequate safeguards contained in the stringent provisions of the Pipe Lines Act relating to such matters as common carriers, traffic, tolls and



tariff; unjust discrimination; accounts and statistics, to enable the Board of Transport Commissioners for Canada, and any person or locality which considers itself aggrieved by the operations of an interprovincial oil pipe line, to take effective means to remedy the situation.

2. Gas Pipe Lines

While the Pipe Lines Act of Canada has provided machinery whereby the route and physical operations of an interprovincial or extra-provincial gas pipe line can be scrutinized in the public interest, there is at present no means by which the rates of such a pipeline can be examined and required to be adjusted in instances where that might appear to be desirable. We believe that this hiatus could be remedied by means of an amendment to the Pipe Lines Act enabling the Board of Transport Commissioners, either upon its own motion or at the instance of any person or locality affected, after a hearing, to correct the matter.

British American believes that it is in the interests of all concerned that a pipe line company be entitled to recover its costs of operation, including a reasonable rate of return on its investment. As a producer, British American strongly believes that the contract prices that carriers have agreed to pay producers should be recoverable by the carriers as a legitimate operating expense.



TERM OF REFERENCE "(c)".

The extent of authority that might best be conferred on a National Energy Board to administer, subject to the control and authority of Parliament, such aspects of energy policy coming within the jurisdiction of Parliament as it may be desirable to entrust to such a Board together with the character of administration and procedure that might best be established for such a Board.

We believe that this subject must be examined in the light of the functions that a National Energy Board could usefully perform in solving problems which have arisen and will arise with respect to the production, transmission, disposition and utilization of oil and gas.

As we have indicated, one of the most important aspects of the situation involves problems relating to the marketing of oil and gas, which cannot be considered solely or primarily from an energy point of view.

As to pipelines, we believe that their financing, construction and operation is essentially a transportation matter. Accordingly, we are of the opinion that the regulation of such pipe lines as come within the jurisdiction of Parliament can be adequately handled by the Board of Transport Commissioners for Canada, which has had long experience in transportation matters. The Board can effectively



supervise all aspects pertaining to pipe line construction and safety. These are essentially similar to the functions which the Board has performed with respect to railways and other forms of transportation.

We feel that the Board of Transport Commissioners should continue to deal with applications for the construction of new inter-provincial and export pipe lines, and extensions to existing pipe lines. The Board, with the assistance of experts where desirable, can properly assess all relevant considerations that are involved.

We also believe that the Board of Transport Commissioners is well qualified to deal with rates, unjust discrimination and like matters, as problems of this nature are common to many forms of transportation.

Under all of the circumstances, and recognizing the constitutional problems involved, as well as the interests of the provinces in these matters, we believe that the administrative machinery for carrying out policies with respect to gas and oil, and indeed, all other sources of energy, has essentially been created by the governments concerned. With some modification and clarification, the administration of a national energy policy can, we believe, be effectively carried out within the framework of existing legislation.



It appears to us that what is primarily required is to see if a national energy policy can be formulated on the federal level. After this has been determined, the character and functions of a National Energy Board or similar organization can then be considered.

It is difficult to precisely define a national energy policy. In broad terms, it would obviously be the most effective use of Canada's energy resources, having regard to the interests of Canada as a whole. Such a statement, of course, involves a consideration of the legitimate interests of the provinces in this matter. Under our federal system of government, the provincial governments would appear to be concerned with, and, except in unusual circumstances, have jurisdiction over the production and conservation of energy sources together with the utilization of these sources. Our study of the situation leads us to believe that it is the provinces who are charged by the constitution with the administration of energy substances, when considered essentially as forms of energy. It seems apparent that the interests of the several provinces will seldom, if ever, enable them to view those broad aspects of energy production and consumption, which they control on a uniform basis. Their outlook will vary, for instance, as their principal interest lies in the consumption or production of these substances.



On the other hand, the jurisdiction and interest of the Government of Canada appears to be related to the inter-provincial and international movement of these substances, viewed essentially from two aspects: firstly, as a matter of transportation; secondly, as a matter of commodity trade.

We are of the opinion, therefore, that it is for all practical purposes impossible to formulate at the federal level a National Energy Policy as such, which would recognize and resolve the conflicting interests involved.

Accordingly, we believe that the functions of, and indeed the need for, a National Energy Board must be examined within this framework. If there cannot be a clearly defined and uniform policy, the functions of any such Board must necessarily be severely limited.

We have indicated that we believe that in so far as the Government of Canada is concerned with the transportation of energy, this can and should be administered by the Board of Transport Commissioners. So far as interprovincial and international trade of these substances is concerned, we feel that this should be the concern of the Department of Trade and Commerce, as these commodities should not be singled out, but must be dealt with as a part of Canada's trade as a whole.

We have reached the conclusion that, if a



special body is required, the most useful purpose that it could serve would be to review on a regular basis trends in energy production and consumption so that the Government of Canada and the Governments of the Provinces would have available information to assist them in formulating, from time to time, and in the light of changing circumstances, policies with respect to those phases of the matter of concern to them and over which they have jurisdiction. Our considered recommendation would be that such a body could consist of representatives of the Government of Canada and of the Provincial Governments, assisted by representatives of industry and by independent experts, whom the organization might request or engage for studies of such phases of the situation as appeared to warrant special or detailed examination.

We would not anticipate that such a body -- which would be more in the nature of an annual or more frequent conference -- would require the establishment of a permanent staff. The secretarial work, we suggest, could be handled by the Department of Mines and Technical Surveys or by the Department of Trade and Commerce or a combination thereof.

It is recognized that for such a body to serve a useful purpose it should have available to it up-to-date reliable and uniform statistics relating to energy matters. We feel that these could be gathered from the provinces and from industry by



the Department of Trade and Commerce, and, without too much difficulty, on a uniform basis. Such information, of course, could serve a far wider purpose and would be of value to government, industry and others. The Commission is aware that much of the information upon which these statistics would be based is of extreme value to the legitimate business interests of the companies and others furnishing the primary reports. We believe it is publicly in such a manner that the interests of individual concerns could not be identified.

CONCLUSION:

1. Energy substances cannot be viewed solely as energy sources as many of them are also important trading commodities.
2. There is in existence federal and provincial legislation which, with some modification to take care of such inadequacies as have been shown to exist, can be effectively administered so as to best serve the public interest.
3. Within the framework of the Canadian Constitution a National Energy Policy that will resolve the diverse interests of the governments of Canada and of each of the provinces in the production, conservation, transmission and utilization of energy substances, cannot be developed at the federal level without the concurrence of each of the provinces.



4. Because of the difficulties involved in the formulation of a clearly defined and uniform energy policy, the functions of a National Energy Board must necessarily be severely limited.

If a special body is required, its most useful function would be to review trends in energy production and consumption so that Canada and the provinces would have available information upon which to formulate policies with respect to those phases of the matter of concern to them. We believe that this could best be achieved by an advisory body consisting of representatives of the governments concerned, assisted by representatives of industry and experts where required.

THE CHAIRMAN: Thank you very much, Mr. Sinclair. Mr. Patterson.

MR. PATTERSON: Thank you, Mr. Chairman. I would like to deal first with the last submission, Exhibit T-9-2, for a few moments. As I understand the submission, it is your opinion that so far as matters of transportation and construction of pipelines are concerned you feel the Board of Transport Commissioners can effectively handle them, that so far as matters of export licensing are concerned you feel the Department of Trade and Commerce can effectively handle those, and so far as any National



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7188

Energy Board may be able to act, you think that should be a third and distinct group. Is that a fair summary of the position?

MR. SINCLAIR: That is correct.



MR. PATTERSON: A problem that arises is this, you do suggest that consideration should be given, first of all, to the matter of price in regard to export of oil or gas, certainly gas, and I am puzzled as to which one of the three groups is to be concerned with this matter of price of export of gas.

MR. SINCLAIR: I think that would be the Department of Trade and Commerce under the existing legislation.

MR. PATTERSON: And you would not consider it necessary, then, to have them holding a hearing in regard to the determination of that matter?

MR. SINCLAIR: I would not think so unless it was an unusual situation.

MR. PATTERSON: What considerations do you think should be reviewed in determining whether the price of exported gas is a proper one within the limits of the Department of Trade and Commerce?

MR. SINCLAIR: I think Mr. Loughney could answer that question.

MR. LOUGHNEY: I think it should be reviewed in the light of the Exportation of Bower and Fluids and Importation of Gas Act which provides that gas should not be sold for less cost per Mcf than it is distributed in Canada, served



by the same facility.

MR. PATTERSON: You do not consider that would be somewhat difficult with the language of regulation 9, talking about similar conditions and circumstances? Do you think that can be interpreted in a satisfactory manner?

MR. LOUGHNEY: Well, I think we have gained a lot of experience in recent weeks and with that experience we should be able to solve that problem without any great difficulty.

MR. PATTERSON: Without amendment of legislation?

MR. LOUGHNEY: Yes. We have a fair understanding of the meaning of that section of the Act.

MR. PATTERSON: You do mention the matter of cancellation of licence and having a hearing; do you think that kind of hearing is one to be handled still by the Department of Trade and Commerce with application made by interested parties to some particular official?

MR. SINCLAIR: I think, Mr. Patterson, if they are going to administer the issuance of these licences they would be charged with the responsibility of seeing that conditions are maintained, and if that sort of situation developed, which I would not anticipate would be very frequent, they could perhaps have some sort of a very formal



and full-scale hearing and engage experts to assist them if they needed them.

MR. PATTERSON: Would you not consider that that type of function, together with this price review function, fits much more closely and is so linked up with the question of cross-Canada rates, pipe line construction, and so on, that you place under the Board of Transport Commissioners, that the one body might be in much better position to deal with both subjects?

MR. SINCLAIR: That is a possibility, Mr. Patterson. My own thinking on it is that the matter of price, and so on, for movement of gas and any other commodity out of Canada then becomes involved to a certain extent in matters of trade policy and I do think that the Department of Trade and Commerce has a very legitimate interest in that.

Then, of course, there is the other aspect of it and that is it correlates with gas prices in Canada, and I think you would have to have some sort of fairly flexible way of looking at that in particular instances.

MR. PATTERSON: Would not another problem of trying to get a link between the Canadian situation and this matter of trade and commerce with other nations arise out of your mention on page 5 of the idea of surplus quantities



of gas for short periods being exported? You envisage there what, Mr. Sinclair?

MR. SINCLAIR: Well, I do not think I had anything specific in mind except that that sort of situation could develop where there might be a market available to take some surplus gas and there should be considerable flexibility in handling it. Mr. Loughney might have something to say on that.

MR. LOUGHNEY: We were thinking that in some manner it might be related to an emergency situation, where a shortage, an unusual shortage, would occur because of some mishap to energy stores and a market would be available on a temporary basis. That could be set up without endangering any supply situation in Canada.

MR. PATTERSON: And you anticipate that Department of Trade and Commerce being set up with sufficient flexibility to be able to handle that kind of thing, or would you simply set up emergency connections with a certain kind of responsibility and industry to police that?

MR. LOUGHNEY: Realizing the full facilities are available, I am considering now that we start first with the source of supply and certainly that would be in the jurisdiction and responsibility of the province in which the



gas supply was located. If there is a surplus of gas as determined by some formula then, acting upon a recommendation of Trade and Commerce, they could carry on with that.

MR. PATTERSON: Now, in dealing with the matter of gas pipe lines you suggest that the contract price that a gas pipe line has paid should be recoverable as a legitimate operating expense. I assume you consider that if there is to be, or can be, any regulation of the price at which that is sold, that regulation belongs to the province. Does that not follow from the position you are taking?

MR. SINCLAIR: Yes, it does.

MR. PATTERSON: And similarly, I suppose, you consider that any regulation of the price at which a distributing company may sell falls within the realm of the province?

MR. SINCLAIR: We think it does.

MR. PATTERSON: And what sort of regulation of rates of the Interprovincial transmission company do you envisage? Simply the setting by the Board of Transport Commissioners of a proposed rate base that permits them to earn a particular return without the setting of specific prices that the pipe line may charge to distributors in, say, Eastern Canada?

MR. LOUGHNEY: We think it should be



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7194

on the basis of determination of a fair rate of return. We are particularly concerned that in our judgment that should not go back to the wellhead cost.



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MR. PATTERSON: Do you feel that the regulation of the price at which the company sells to its distributors upon, for example, a direct sale to an industrial user, large industrial user - should that be determined at all by a Federal authority or should the determination of that type of thing be done by Provincial authority?

MR. LOUGHNEY: The price structure we feel should be dealt with by the Provincial authorities.

MR. PATTERSON: Turning to the gas export formula, T-9-1 - -

MR. LOUGHNEY: Mr. Patterson, is that all of the questions now you would like to ask on that? We have a switch here.

MR. PATTERSON: Yes, those conclude my questions in this regard.

I wonder if you can assist me in ensuring I understand this formula. I take it that, first of all, the matter of determination of actual reserve you would feel would lie within the jurisdiction of the various conservation boards in western Canada or - -

MR. LOUGHNEY: We suggest that the conservation boards in the various provinces and in conjunction with the Canadian Petroleum Association, having a study each year.

MR. PATTERSON: You would think that in reviewing the matters of determining exportable surplus the Department of Trade and Commerce, as suggested by you, should pay attention not only to the figures given them by conservation boards but also to those given by the Petroleum Association.

MR. LOUGHNEY: Well, satisfy themselves to that extent, yes.

MR. PATTERSON: Are you not in this situation, that under your thinking in regard to this matter the only gas that is going to get out of the Province of Alberta, for example, is that which is authorized to leave the Province, no matter what its direction be by the conservation board? I am puzzled by the value of these figures on the basis of existing reserves.

MR. LOUGHNEY: I believe I may - I think Mr. McKinnon will back me up, that the Canadian Petroleum Association, the joint Committee of the Canadian Petroleum Association has rendered valuable assistance in the determination of oil and gas reserves. Is that correct?

MR. FRAWLEY: Mr. McKinnon agrees.

MR. PATTERSON: Moving from the position once an existing reserve is worked out, you then suggest that, in order to properly look at the situation, we should set up a projection based



on past experience with - actually you have three rates of growth - and, using that, we decide what is likely to be the position as to the development of reserves five years from the time when we are making our calculation.

MR. LOUGHNEY: We have used in this example three figures. We took, for the purposes of those, the minimum that was discovered, the lowest in the 5-year period, which was 1.06 trillion. That was an unusual year to the extent that it was quite low. There was one year, 1954, it appeared to be higher than we might expect in the future. Then we used the three lowest years of the 5-year period, and we also used the average of the 5 years. We concluded from our own studies that, to be on the conservative side and still not be too conservative, probably using the average of the three lowest years in the 5-year period would be a better method to follow.

MR. PATTERSON: And that using the rate you selected you made a projection for 5 years hence.

MR. LOUGHNEY: Yes.

MR. PATTERSON: You take the figure and say, for example, by 1963 it is anticipated we will have a particular reserve accumulated.

MR. LOUGHNEY: Yes, that is correct.

MR. PATTERSON: Similarly, you take a



look at anticipated consumption figures and determine a rate of growth for those.

MR. LOUGHNEY: Yes.

MR. PATTERSON: And again project that for a 5-year period.

MR. LOUGHNEY: That is correct.

MR. PATTERSON: And consider that consumption at the end of the 5-year period at the rate existing at the end of the 5-year period times twenty-five will be the necessary retained reserve.

MR. LOUGHNEY: That is right.

MR. PATTERSON: Now, in doing that and setting aside the necessary retained reserve, what notice or consideration is given to the question of deliverability of that necessary retained reserve? Do you have a cushion in there for doing that or do you put in gas to ensure deliverability will be taken care of by the trend of growth of reserves beyond your 5-year period?

MR. LOUGHNEY: Mr. Anderson will answer that.

MR. ANDERSON: Mr. Patterson, there are no actual deliverability calculations made for this reserve. It is strictly on the basis of growth in reserves and so on, and, taking those three out of the past five years, we feel gives a more conservative approach to it, so that



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deliverability should be forthcoming from the remaining reserve at any time.



MR. PATTERSON: It has been suggested the deliverability factor in the order of 35 -- 45, and even 50 per cent, should be considered. Do you feel that again this rate of growth figure is sufficient to take up the necessity for almost double your necessary retained reserve?

MR. ANDERSON: I think, Mr. Patterson, for this 25-year supply you could use a rule of thumb used by the industry quite frequently and that is the 10 billion reserve will support 1 million cubic feet a day for a period of approximately 25 years.

MR. FRAWLEY: I would like to get that again.

MR. ANDERSON: 10 billion cubic feet will support 1 million cubic feet per day production for a period of approximately 25 years. I think that allows you sufficient leeway, Mr. Patterson. There are, of course, exceptions both ways, one way and the other.

MR. PATTERSON: I wonder if you can clear up this a bit. There is a bit of confusion that appears to me to arise out of Table I. That is the data to the graph. Reading for the year 1957 I see you have under the column "Canadian T.C.F./Year" .18. Then under the column 7 which is entitled "Determination of Necessary Retained Reserve" you have multiplied that figure .18 by 25 and we get



the answer 4.51 under column 7. Is that correct?

MR. ANDERSON: Yes, sir, it should be.

MR. PATTERSON: Now my problem is, as I understood it, in determining the necessary retained reserve it was not the 1957 we multiplied by 25, assuming we are dealing with the matter in 1957, but the 1962 figure that we multiply by 25 in order to determine the necessary retained reserve.

MR. ANDERSON: Yes, sir.

MR. PATTILLO: My understanding of the position is correct that you multiply the 1962 figure by 25.

MR. ANDERSON: Right, to determine the exportable surplus, yes.

MR. PATTERSON: Those are the questions I have. Thank you, Mr. Chairman.

THE CHAIRMAN: I assume, Mr. Frawley, that you have some questions to direct to Mr. Loughney.

MR. FRAWLEY: Yes. Were you thinking of a break?

THE CHAIRMAN: I would suggest if you do that we will have a break first.

MR. FRAWLEY: Thank you very much.

THE CHAIRMAN: We will have a break for ten minutes, gentlemen.

---A short recess.



THE CHAIRMAN: Gentlemen, the hearing will now resume.

Mr. Frawley?

MR. FRAWLEY: I would like, first, to make a very brief remark about Exhibit T-9-1, which is called the "Procedure for Determining Exportable Volumes of Gas."

It is very fortunate I have with me Mr. McKinnon, the Chairman of the Oil and Gas Conservation Board for Alberta, and he has suggested that I say no more than that we find this to be a very interesting document, and that our friends of British-American are to be complimented in producing it.

We would like to study it further. We would like to see where it fits in with the procedures which are presently being followed; and we would like to have the right, if we think that it should be necessary, to make some observations to the Commission, in writing or otherwise, later on.

THE CHAIRMAN: The only thing that I would object to in what you say is that, if you found it necessary, the Commission would like to have Mr. McKinnon's observations in any event.

MR. FRAWLEY: All right. Then, I shall say that you shall have them.

THE CHAIRMAN: Thank you.



MR. FRAWLEY: There is only one thing I want to ask Mr. Sinclair about in his policy statement.

Mr. Sinclair, looking at your brief on page 6, you have a paragraph at the bottom of the page, and you say that you think "... that it is in the interests of all concerned that a pipe line company be entitled to recover its costs of operation...", and you go on to say: "... As a producer, British-American strongly believe that the contract prices that carriers have agreed to pay producers should be recoverable by the carriers at a legitimate operating expense..."

You have agreed with Mr. Patterson that the regulation of the price which the producer obtains in the field is a matter of provincial regulation, if any?

MR. SINCLAIR: Yes.

MR. FRAWLEY: And to take Trans-Canada as a concrete example, Trans-Canada pays in Alberta a price for the gas, will you agree, which is to be subject to provincial regulation, if any; and then Trans-Canada transports the gas and delivers some of it to Consumers' Gas in Toronto?

MR. SINCLAIR: Yes.

MR. FRAWLEY: Precisely; so that, in



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your concept, the Federal Board of Transport Commissioners would be regulating and controlling?

MR. SINCLAIR: Well, Mr. Frawley, our point there is that they would be regulating and controlling the cost of service that was provided by the pipe line company. As you know, at the present time the situation is essentially this, that Trans-Canada pipes the gas, transports it and then sells it at the other end.

What we were concerned with there was that really their cost of service, in one way of looking at it, includes the price that is paid for the gas; and the price that they deduct from the price they sell at, that is the purchase price; and the difference is really the cost of transporting the gas.

MR. FRAWLEY: Which the Federal Board would regulate?

MR. SINCLAIR: Yes, that is right; just the cost of doing business plus a reasonable rate of return.

MR. FRAWLEY: But the other way of looking at it is that it is the sale of a commodity by Trans-Canada to Consumers?

MR. SINCLAIR: Well, it is, in a sense; but I think that is really the practical way under the situation at this moment, in which they do the transporting. That is really what their



business is.

MR. FRAWLEY: It is certainly the sale of the commodity when the individual householder gets it from Consumers?

MR. SINCLAIR: Yes.

MR. FRAWLEY: Well, in any event, you feel that the Federal Board should be permitted to pass upon the cost of service - the pure cost of service?

MR. SINCLAIR: That is right.

MR. FRAWLEY: But you would agree with me that you are getting very close to regulation by the same Federal Board of the selling price of a commodity also if they were to have very much to say about the price at which Trans-Canada sells to Consumers?

MR. SINCLAIR: That could be, Mr. Frawley; but, actually, the way we look at it is that it is a transportation problem - it is a transportation service - which is being performed; and essentially it is no different from the transportation service that is being performed by any other type of carrier.

MR. FRAWLEY: Except that the C.P.R. sells haul; the C.P.R. doesn't sell the freight itself?

MR. SINCLAIR: There is this situation, Mr. Frawley, that there is a trend in the United



States where State transmission companies merely act as contract haulers, and in that situation it is strictly a transportation matter.

MR. FRAWLEY: Probably as you see it, Mr. Sinclair, it could be said that the Federal Board would regulate the wholesale price, with the Provincial Board regulating the retail price. Would that be a fair comment on it?

MR. SINCLAIR: That might be required.

MR. FRAWLEY: When I say, "Wholesale price", I mean the price to the distributor?

MR. SINCLAIR: I think you might have to look at it. Hauling affects the cost of transportation.

MR. FRAWLEY: The only purpose of my question is just to indicate to you that, as I see what you are saying, you actually do have the Federal Board of Transport Commissioners - and let us just think of them as they are now - taking on the job of regulating the sale of a commodity, which, at the moment would seem to me to be a pretty far departure from anything they have ever done since they were set up in 1903.

MR. SINCLAIR: I don't think we look at it that way.

MR. FRAWLEY: I think that is fair - that you just don't look at it that way. I am wondering if that is a necessary consequence of



the way you see it.

I think that is all.

THE CHAIRMAN: Thank you, Mr. Frawley.

I suppose, Mr. Sinclair, really what that sentence means is that if there would be anything left over of the gas the west wants to make sure that whoever buys it and brings it east is able to get the money back to pay for it. Is that a fair statement?

MR. SINCLAIR: Yes.

THE CHAIRMAN: You are not concerned with the jurisdictional problem?

MR. SINCLAIR: No.

MR. COMMISSIONER BRITNELL: May I refer to one point on page 9 of the main submission. There is a sentence there: "... Our considered recommendation would be that such a body could consist of representatives of the Government of Canada and of the Provincial Governments...".

I would like to hear from Mr. Loughney whether he is thinking there of members of the legislature or of civil servants?

MR. LOUGHNEY: We were thinking more of civil servants, or people who are not connected with the Government, who could be nominated by either the Federal Government or the Provincial Government.



7208

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MR. COMMISSIONER BRITNELL: That is not
at the policy level itself?

MR. LOUGHNEY: No.

MR. COMMISSIONER BRITNELL: Thank you,
Mr. Loughney.



MR. COMMISSIONER LADNER: Reading on page 6, and the last paragraph that has been discussed just now, from a tax point of view, and reading it with that thought in mind:

"As a producer. British American strongly believes that the contract prices that carriers have agreed to pay producers should be recoverable by the carriers as a legitimate operating expense".

That does not include prices for gas, because, taking Trans-Canada as an illustration, the purchaser would be Trans-Canada, would it not?

MR. LOUGHNEY: Yes, it would be the purchaser.

MR. COMMISSIONER LADNER: So that that expression "contract prices" does not include the price that is paid to the producer for gas?

MR. LOUGHNEY: Yes, it does.

MR. COMMISSIONER LADNER: But does the transmission company, the pipeline company become the owner of the gas?

MR. LOUGHNEY: The gas is owned by Trans-Canada Pipelines.

MR. COMMISSIONER LADNER: By Trans-Canada Pipelines?

MR. LOUGHNEY: Yes, sir.

MR. COMMISSIONER LADNER: And as a cost, you say, it is not deductible from the operating



revenues?

MR. LOUGNEY: We say that it should be.

MR. COMMISSIONER LADNER: The cost of any article used in the company's operations is a legitimate deduction against revenue for tax purposes, as I understand the law.

MR. LOUGHNEY: That is correct. Our thought there is that in any regulation of Trans-Canada at any point by any authority we do not feel that the price that Trans-Canada pays for its gas should be part of the consideration of any situation that might develop in an investigation of the rates or cost of service in any other part of the business.

MR. COMMISSIONER LADNER: For rate purposes?

MR. LOUGHNEY: Yes, sir, rate purposes or determination of cost of services.

MR. COMMISSIONER LADNER: Now I would like to speak for a moment, or get information, if I may, in connection with the proposed or suggested National Energy Board. It would appear that you might prefer that the functions indicated here for a National Energy Board should be distributed among the Department of Trade and Commerce and the Board of Transport Commissioners and so on, or that they should retain the functions they normally have in connection with that. Do you know if the Board of Transport has such spare time as to enable it to act fully in connection with the matters that we have been discussing here?



MR. LOUGHNEY: No, I do not know.

MR. COMMISSIONER LADNER: Could they take on the duties that we are discussing, that would be normally given to the National Energy Board? I have not heard any information on that point.

MR. LOUGHNEY: I beg your pardon?

MR. COMMISSIONER LADNER: I have not heard any information on the point of whether or not the Board of Transport Commissioners have sufficient time -- we know they have the qualifications -- to take on the duties which are indicated here for the National Energy Board.

MR. LOUGHNEY: We feel it would be more economical and more efficient for the Board of Transport Commissioners to take on this responsibility which deals with matters with which they are familiar. I do not know as to whether they have the time or not. I do not know whether they have an adequate staff to do it, but we suggest that the gas business in Canada in the near future will be large enough that, if they do not have the staff, it has got to be provided.

MR. COMMISSIONER LADNER: My next question is: what would be your comment on the suggestion that a National Energy Board be set up with representatives not only from business and the oil industry but from the Department of Trade and Commerce in respect of Department of Trade and Commerce matters, from



the provinces where there is gas and oil production in quantity, from the Board of Transport Commissioners having experience in transport matters, and from the Canadian Petroleum Association, in order to co-ordinate the functions of those different branches with the policies of the Provincial Governments. What comment would you have on such a set-up?

MR. LOUGHNEY: I think that would provide a Board that would certainly be able to carry out the functions as we visualize them. The complement of the Board should be such as to have on the Board all members interested, both government and industry.

MR. COMMISSIONER LADNER: Wouldn't that be a more effective method of handling the problems of the gas and oil industry, not only in respect of production and transportation but in dealing with the international phase of the question?

MR. LOUGHNEY: Yes, I think there is considerable merit to your suggestion.

MR. COMMISSIONER LADNER: Thank you.

MR. COMMISSIONER HARDY: I would like to discuss with Mr. Sinclair for a moment the particular problem in which I see a certain amount of difficulty. That is the one in which you treat your gas as a commodity rather than energy. I would like to take an example which is not too academic. I think that actually it is a very practical example at the moment.



You produce gas in Alberta and market it to Trans-Canada and you sell your gas to Trans-Canada and you pay no attention to end use, and you suggest that no government authority in Alberta should pay any attention to end use.

MR. SINCLAIR: I think, Mr. Commissioner Hardy, that, in so far as our statements on end use is concerned, it is found in that portion which deals with export, and I think we have said there that it would be probably impractical under the circumstances.

MR. COMMISSIONER HARDY: I think it probably is. I am just presenting you with a set of conditions here; I am not asking you a question yet. Trans-Canada transports that gas down to Ontario, and you suggest that it is handled as a commodity, and the price control is as a commodity. Then they sell it to Consumers' Gas, and it is bought as a commodity. Then they have a lot of gas they have to sell. They have to market that gas, consistent with the load factor that they buy it at and consistent with the load factor that they have to sell it at. Then we get into the sale of interruptible industrial, and it is a question of storage, and their economics is determined only by the price at which they buy from Trans-Canada. Trans-Canada has no interest in storage at all. They have a contract to sell it at 90 per cent load factor. So Consumers' base their economics



of storage and sales of interruptible gas on a set of restricted economic conditions that govern their own company, which you say is as it should be. They are controlled only on a commission basis. Consistent with that, they then come up with a price for the industrial load as far as the fuel oil is concerned. That fuel oil might be the same as eventually produced by B.A. in Alberta and marketed at considerably greater profit to you and also with a considerably greater income to the Province of Alberta for the same heating capacity as you get from the gas. If you are operating as an integrated company and performing all these functions around the line, I doubt very much if you would permit that sort of thing to go on, and I do not see how you can stop it by the mechanism of control, of treating the gas as a commodity rather than, as I think it can only be stopped, by considering the gas as energy and by considering the oil as energy. Someone should then take a look at the energy situation rather than the commodity situation. You tell me how you can solve that within the framework of what you have here. I would like to be advised.

MR. SINCLAIR: Well, first of all, Mr. Commissioner Hardy, I think we have considered that problem, and our brief does not deal with the end use in so far as Canada is concerned, but I think I would like to refer you to Mr. Loughney on this. He is an expert on it, and I understand he has just recently



given quite a bit of thought to it. Perhaps he can discuss it with you.

MR. LOUGHNEY: If I might, I would like to read a paper which I delivered to the Canadian Gas Association last week. I think they asked this question.

"It is my contention that gas should be priced in accordance with the amount of energy it provides. Underpricing gas is a dangerous practice, because it puts all other fuels at a competitive disadvantage, and sooner or later you find gas being used in applications where it is not economically suitable, replacing such fuels as bunker coal. However, I do not feel, as has been suggested from time to time in the U.S., that the uses to which gas can be put should be limited by government action.

"The natural laws of economics are always far superior to man-made laws, and should be allowed to establish such things as usage and price."

We feel that the price of gas is not artificially held down by some form of government action but is allowed to seek its own price level with the competition of other fuels, that that in itself will help to prevent the situation from coming about that you describe. But if, as has been suggested, Trans-Canada or any other pipeline operates



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7216

on handling the highest possible volume of gas and sells it at the lowest possible price, the situation as you describe it certainly will come about, and that has very recently been quoted in the press in the United States as one of the major contributing factors to the present oversupply situation in the United States, it being not so much a question of the impact of imports of crude as it is a change in the pattern of energy. Gas has displaced bunker fuel, disrupting the normal refinery-producing patterns.



MR. COMMISSIONER HARDY: Well, I would put this to you, Mr. Loughney, that as I see it it is not a matter of creating this by government action, it is a matter of taking some action that would require the proper set of economic conditions to give them consideration and you do not get it under this broken-down authority along the line. Everyone is coming to the right answer as far as the particular set of conditions they are working on but no one takes the overall picture and considers what I would suggest is a proper set of economics. How do we exist with a proper set of economic rates to be applied to the problem, assuming on behalf of my economic friends that they have those rates?

MR. LOUGHNEY: To go back to our statement that has been questioned, the field cost being a lower cost, then certainly it will be our purpose to try to get the field cost of gas as high as we think it should be and still permit the pipeline company to sell in volumes that will make their situation profitable and allow them to sell gas to lines if it is going to help us in the total gas picture too. We are concerned that there may be developing a practice that has been started in the United States to attempt to regulate the wellhead price of gas and keep it down where it becomes so competitive with other fuels that it displaces them



and we are very much concerned with both sides of the discussion.

MR. COMMISSIONER HARDY: But your position in attempting to get the wellhead price of gas up, I would suggest, is you are stymied to the extent by the very type of regulation you are suggesting in here as the proper one. You are stymied in this case. One way to move the wellhead price of gas up is to get some more export permits in Alberta, it is the export permits which are held up to a certain extent by the competition and the people who are selling or attempting to sell this interruptible industrial gas in the Ontario market.

MR. LOUGHNEY: It does not necessarily follow - -

MR. COMMISSIONER HARDY: At least they are entitled to that gas whereas if you did not have that demand you would get an export permit much faster, then the price would go up. It is a vicious circle you fellows you are in.

MR. LOUGHNEY: Well, we fully appreciate the problem. There is one point you made there we do not agree with: the export markets in the south are going to increase the wellhead price of gas, there is some evidence that it is but I am not prepared to say to you or anyone else that the price of gas may have come up regardless of whether we



had an export permit or not. We have always contended from the very beginning that the price at which we contracted initially for gas was a low price, too low in the terms of the costs of exploration, development and construction processes but it was a contribution that had to be made on the part of industry in order to get a gas pipeline started across Canada. But we certainly, regardless of whether there is an export permit or export application we feel there should be an upper adjustment in the price.

MR. COMMISSIONER HARDY: Thank you.

THE CHAIRMAN: Do you find any difficulty in reconciling the position of B.A. in these circumstances because unless you do get a regulation based on this then you lose in one way or the other, do you not, either as a producer, a major producer of gas or as a major shareholder in Trans-Canada Pipeline?

MR. LOUGHNEY: We recognize we do have a problem there.

THE CHAIRMAN: The two positions are somewhat inconsistent, are they not?

MR. LOUGHNEY: Well, sometimes we feel we are our own toughest competitor from one department to another.

THE CHAIRMAN: Well, I will get off that. Mr. Loughney, surely in the consideration of these



control suggestions that you have in your brief you and your colleagues must have considered if an Energy Board such as has been suggested is established what should the character of its administration and procedure be? Have you considered that at all even though you did not put it in your brief?

MR. LOUGHNEY: Yes, we have.

THE CHAIRMAN: Would you be good enough to help us by giving us your views on that?

MR. LOUGHNEY: Assuming there is to be an Energy Board?

THE CHAIRMAN: Assuming there is to be a National Energy Board, what would, in your opinion, be the best kind of administration and procedure for that Board to have and adopt? Should it be composed of full-time men outside the government service, if so, drawn from industry, the oil and gas industry, let us say, or with no connection? How many should there be? What should be their set-up, so to speak, administratively?

MR. LOUGHNEY: Could you help us a little bit? May I ask a question?

THE CHAIRMAN: Certainly.

MR. LOUGHNEY: What would be the jurisdiction of such a Board?

THE CHAIRMAN: Well, you must have considered that.



MR. LOUGHNEY: Would it be regulatory,
is that what you mean?

THE CHAIRMAN: Yes. Well, read the terms
of reference to this Commission:

"the extent of authority that might best be
conferred on a National Energy Board to
administer, subject to the control and au-
thority of Parliament, such aspects of energy
policy coming within the jurisdiction of
Parliament as it may be desirable to entrust
to such a Board, together with the character
of administration and procedure that might best
be established for such a Board":

In other words, assume for a moment that its authority
would extend to all matters of energy policy coming
within the jurisdiction of the Parliament of Canada.



MR. LOUGHNEY: Well, as to the complement of such a board, by all means they should be such people from each of the fields of energy that are experience in those fields.

As to the duties and responsibilities of the board as far as regulation is concerned, again we would say what we have already said, that we don't feel that the well-head price should be the responsibility of such a board; but the board - I am speaking now of gas - should concern itself with **such** matters as the cost of service and the **proper** operation of the pipe line to serve the best interests of the consuming public.

THE CHAIRMAN: Well, where would you start? You would start with a national policy with respect to export of energy.

MR. LOUGHNEY: Yes.

THE CHAIRMAN: National policy with respect to the importation of energy.

MR. LOUGHNEY: Yes.

THE CHAIRMAN: All the present responsibilities, let us say, of the Board of Transport Commissioners.

MR. LOUGHNEY: That is correct.

THE CHAIRMAN: Over **Interprovincial**?

MR. LOUGHNEY: Yes.

THE CHAIRMAN: And transmission of energy?



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MR. LOUGHNEY: That is right.

THE CHAIRMAN: And the co-ordination of the policies of the various provinces?

MR. LOUGHNEY: Yes.

THE CHAIRMAN: Co-ordination of statistics. Don't you think those things would amount to a man-sized job in a country such as ours and would require the time of experts in the field as well as full-time administration? I am sorry, I want to catch your thinking; obviously you people have given us a lot of thought. Can you safely leave those problems to be dealt with by, shall I say, the political branch of Government?

MR. LOUGHNEY: Well, to this extent, Mr. Borden, that in our discussion in this matter we think that, for example, in the Board of Transport Commissioners in time the pipe lines, both oil and gas, will reach proportions that the section of the Board of Transport Commissioners will be devoted entirely to oil and gas pipe lines in the province. By the same token, in considering the duties and responsibilities of the Department of Trade and Commerce, we can well see that the problems, as you have described them, could well result in a separate branch of the Department of Trade and Commerce for that purpose. Now, within the frame work of the existing authorities, we



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have felt that that was a better approach to it than a National Energy Board.

THE CHAIRMAN: Well, you have the Board of Transport Commissioners now involved in it, the Department of Mines and Surveys, the Department of Trade and Commerce, the Bureau of Statistics, and possibly several others.

MR. LOUGHNEY: Yes, that is correct.

THE CHAIRMAN: Apart from Finance.

MR. LOUGHNEY: They find a way in most of them, and I expect they will be in this one.

THE CHAIRMAN: You will admit it is a difficult problem.

MR. LOUGHNEY: Yes, sir.

THE CHAIRMAN: Well, thank you very much, Mr. Loughney, you and your colleagues. Certain of us know perfectly well the amount of time and labour and thought that you and your senior executives have been put, particularly on this presentation of formula for gas. We are very grateful to you, and I am sure it is very helpful to the Commission in considering this very difficult problem. With respect to your brief on control, I just want to say in discussing this with you nothing that I have said should be taken as an innuendo that the present people in charge of this regulation are not doing a proper job. Thank you very much.



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MR. LOUGHNEY: Thank you, sir.

THE CHAIRMAN: Mr. Pattillo?

MR. PATTILLO: Mr. Chairman, the next submission is one by the Cities Service Oil Company Limited and Mr. Hull is here as the head of the company in Canada and will give the submission. I propose that it be marked as T-9-3.



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Submission of
CITIES SERVICE OIL COMPANY
LIMITED

APPEARANCES:

R. J. HULL - President

--- EXHIBIT NO. T-9-3: Submission of Cities
Service Oil Company
Limited.

MR. HULL: Mr. Chairman and members
of the Commission, I have a very brief brief which
I would like to take a moment or two to read to
you and which will give you a general background
of our situation at the present time.

I would like to make one slight correction
in Mr. Pattillo's introduction. I am president
of the Cities Service Oil Company Limited. We
have another company in western Canada for
production work which is totally disassociated
from my responsibility.

As of the first of 1958, Cities Service
had three subsidiary companies operating in Canada,
namely:

1. Cities Service Oil Company Limited -
marketing petroleum products in Ontario



and Quebec.

2. Dominion Natural Gas Company - engaged in the production and distribution of natural gas in Southern Ontario (the assets of this company were recently sold to other utility interests).
3. Canada-Cities Service Petroleum Corporation - engaged in the exploration and crude oil production activities in Western Canada.

Cities Service began its operations in Canada in 1912 with the acquisition of Dominion Natural Gas Company. Cities Service Oil Company Limited began in 1921 and is presently building a refinery in Trafalgar Township, Ontario. Cities Service has been engaged in looking for oil and gas in Canada since 1926.

As of January 1, 1957, we decided to build a new refinery in Canada to support our marketing operations and to utilize the crude production now being developed by our affiliated company, Canada-Cities Service Petroleum Corporation, in Western Canada. For the time being, we intend to confine our activities in marketing and refining to Ontario and Quebec but long-range plans dictate ultimate expansion into other provinces.

The location of our refinery was arrived at only after an exhaustive study of the three principal



refining areas now serving the Ontario market: Sarnia, Toronto and Montreal. Our investigation resulted in the choice of a site in Trafalgar Township, roughly half way between Toronto and Hamilton, which will be supplied by Canadian crude moving over Interprovincial Pipe Line Company's recent extension into the Toronto area. We chose this location, in the heart of the Ontario market, because we believe all factors considered, it will best enable us to serve our present marketing area.

We have earmarked an investment of approximately \$40 million for our initial refinery and marketing expansion program, which should be completed in 1959. This, of course, is exclusive of the investment which Canada-Cities Service Petroleum Corporation is putting into our exploration and producing operations in the West. This expenditure investment will total some \$36,000,000 by the end of this year.

Construction progress on our refinery has exceeded our expectations to the point that we are now planning our first receipts of crude oil for October of this year. The first crude runs at the plant will be made around December first of this year and we hope to have it running at full capacity in the first quarter of 1959.



A wealth of facts and figures regarding Canadian natural gas and crude oil reserves, both proved and potential, has been presented to the Commission along with data covering projected demand and prices for these commodities. We do not believe that we are able to add any pertinent information to that which has already been presented. Suffice it to say that Cities Service is in accord with the testimony indicating that Canada's producing potential is well able to supply its demand in the foreseeable future.

We believe that the forces which have propelled Canadian petroleum demand upward so dramatically in the past decade are still strong and vital. Although there is at present a temporary abatement in the rate of increase in demand, we are firm in our belief that both domestic and foreign requirements for Canadian crude will inevitably grow, as in the past, along with the anticipated growth in Canada's population and living standards.

As for Canada's domestic demand, it is well known that the increase in the past ten years has been phenomenal. In 1947, for example, less than two million Canadians were served by products made from Canadian crude. Today, more than ten million Canadians live within the sphere of its domestic crude production, an increase from less



than 10 per cent of the population to 60 per cent in a remarkably short period of time. The market area for western crude during that period has developed from supplying small local refineries to the point that Ontario has now become the cross-roads where products refined from Canadian crude compete with imports from the U. S. and products brought in from Montreal, refined from imported crude. It is of primary importance to point out here that these great strides have been accomplished by an aggressive industry allowed to operate freely and with no artificial controls placed upon the basic economic forces of supply and demand.

In 1957, this crossroads province of Ontario consumed slightly more than 220,000 barrels per day of the principal petroleum products -- liquefied petroleum gas, aviation and motor fuels, light and heavy burning oils -- and increase of approximately 125 per cent over 1950 and an average increase of slightly less than 11 per cent compounded per year in these products. By contrast, over the same period, refinery runs of these products in Ontario increased almost 150 per cent -- almost 15 per cent compounded per year, to the point that 64 per cent of Ontario's requirements is now supplied by Ontario refiners. A little more than 8 per cent of Ontario's requirements is



imported from the U. S., leaving 28 per cent to be produced from foreign crude runs at Montreal.

With the 1959 completion of other refinery expansion projects announced for that year, Ontario's refining capacity will be increased from the present 198,000 barrels per calendar day to 250,000 barrels per day. For the first time in history, this should put Ontario's refining capacity essentially in balance with demand in the Ontario area. If full utilization of this capacity were achieved, it could result in an increase of 75,000 to 100,000 barrels per day in Ontario's demand for western crude in the year ahead with a corresponding decrease in the imports of United States and Montreal refined products in the Ontario market. In spite of the present economic recession, the chaotic retail gasoline market in Ontario, and the slump in demand for western crude, we are proceeding with the development of our producing, refining and marketing facilities. We are convinced that the problems besetting the industry today are very short term and that in the very near future the demand for western production will begin a steady and permanent climb.

Since our company is building a new refinery, going ahead with a very active service station construction programme and a vigorous exploration and development programme for oil and gas



production, it would seem to us that this in itself indicates that Cities Service has unbounded confidence in the future of Canada.

Gentlemen, that is the end of our very short brief and we would be happy to answer questions.

THE CHAIRMAN: Thank you, Mr. Hull.
Mr. Pattillo?

MR. PATTILLO: Mr. Hull, could we spend a few moments on the Corporate set-up of the company of which you are the head? Is it a wholly-owned subsidiary of Cities Service, which has its head office in the City of New York?

MR. HULL: That is not quite correct. We are a wholly-owned subsidiary of Empire Gas and Fuel Company, which is in turn a holding company and owned by Cities Service Company.

MR. PATTILLO: How many directors are there of your company?

MR. HULL: There are nine.

MR. PATTILLO: How many resident in Canada?

MR. HULL: One.

MR. PATTILLO: That is yourself?

MR. HULL: Myself.

MR. PATTILLO: You are the president of it?

MR. HULL: I beg your pardon. I made



a mistake. We have three resident directors in Canada.

MR. PATTILLO: Are the other two persons who are resident directors Canadians?

MR. HULL: Not Canadian citizens, no.

MR. PATTILLO: Are they officers of the company working as directors?

MR. HULL: They are officers of the company.

MR. PATTILLO: Now, has the company any funded debt which does give Canadians an opportunity to subscribe in?

MR. HULL: No, no funded debt whatsoever publicly held by anyone.

MR. PATTILLO: Now the company that is out west, the producing company, is that in any way associated with the company of which you are president?

MR. HULL: Only as a sister company; that company is also a subsidiary wholly-owned by Empire Gas and Fuel Company.

MR. PATTILLO: Who is the active head of that company?

MR. HULL: Mr. B. S. Watson. He is the president of the company and the executive vice-president is Mr. Kidd, who is with Cities Service in Delaware.

MR. PATTILLO: Who is the manager of it



in Canada?

MR. HULL: Mr. E. W. Dissler, resident manager and vice-president.

MR. PATTILLO: Do you know how many directors there are of that company?

MR. HULL: I don't happen to know that.

MR. PATTILLO: Do you know whether it has any funded debt?

MR. HULL: I am sure it has no funded debt that is publicly held.

MR. PATTILLO: Now, in connection with your operations, your company's operations here in Ontario and Quebec at the present time, what is the source of its products which it is selling to the public -- I mean regional source?

MR. HULL: At the present time the source of the products is Montreal refinery area.

MR. PATTILLO: Are you importing any from the United States?

MR. HULL: Not principal products. We are importing small amounts of lubricating oil.

MR. PATTILLO: Principal products are all being obtained from the Montreal refineries? That is correct.

When you open up your new refineries of which you have told us, what will be the source of your crude?

MR. HULL: The source of our crude



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will be Canadian crude by Interprovincial Pipe
Line.



MR. PATTILLO: And all the crude that you will require will be obtained from the Inter-provincial Pipe Line?

MR. HULL: That is our present intent.

MR. PATTILLO: In this expansion programme that you are now carrying on do you anticipate that you will shortly be able to operate your refinery at its full capacity?

MR. HULL: I don't think we will be able to operate our refinery at full capacity for the first two years, perhaps. We will be somewhat under rated capacity during that time as we see our sales projections at the present time.

MR. PATTILLO: So that you will have, for at least two years, some available capacity if arrangements could be worked out whereby products presently coming into Quebec and Ontario were stopped?

MR. HULL: That is correct.

MR. PATTILLO: Am I correct in thinking that at the present time you are confining your business operations to the two central provinces of Ontario and Quebec?

MR. HULL: Yes, sir, Ontario and Quebec.

MR. PATTILLO: Once you have saturated those markets you may move on to other provinces.

MR. HULL: Yes, we will do that.

MR. PATTILLO: Do you know whether any



of your affiliate companies have any refineries in the Pacific northwest area?

MR. HULL: I know that we do not have any refineries in the Pacific northwest area.

MR. PATTILLO: And in what I call the middle west of the United States have you any refinery?

MR. HULL: Yes, we have a refinery in Chicago which is operated by one of our associate companies.

MR. PATTILLO: Can you tell me what capacity that refinery has?

MR. HULL: The capacity of that refinery is 55,000 barrels a day.

MR. PATTILLO: And what is the source of crude which it uses there?

MR. HULL: Principally Oklahoma and some Kansas crude.

MR. PATTILLO: Would that be company-owned crude, or would it be purchased crude?

MR. HULL: It would be both. We purchase a great deal of crude in the United States and we produce about 50 to 55 per cent of our requirements.

MR. PATTILLO: Is Cities Service, through any of its affiliates, carrying on business in the oil-producing fields beyond the Continent of North America?

MR. HULL: Yes; we are exploring in many



foreign fields at the present time. We have some small production in a few areas, but not of any great significance right now.

MR. PATTILLO: And is the company exporting any crude into the United States?

MR. HULL: Yes; we are exporting crude from the Middle East at the present time to Philadelphia.

MR. PATTILLO: Now, we have heard mention of a company of the name of Richfield, as having a refinery in the Pacific northwest of the United States. , Has Cities Service any association with Richfield?

MR. HULL: Yes, we have an association with Richfield. When you asked the question I was thinking of subsidiary companies. But we have substantial stock in Richfield Oil Company of California.

MR. PATTILLO: Can you tell us what that percentage is?

MR. HULL: It is approximately 31 per cent.

MR. PATTILLO: And are there other people who are substantial shareholders in that company?

MR. HULL: Yes. Sinclair is approximately an equal shareholder with Cities Service in that company.



MR. PATTILLO: Is that the same Sinclair that carries on a producing business in Alberta?

MR. HULL: Yes, I believe so.

MR. PATTILLO: Mr. Hull, do you know anything about what the unused refinery capacities existing in Ontario are at the present time?

MR. HULL: Not officially; only by hearsay.

MR. PATTILLO: What have you heard by hearsay?

MR. HULL: I have heard that these two refineries in Ontario are not up to capacity, that are now in operation. As I say, I have been told that -- that B-A and Regent are not utilizing their capacity.

MR. PATTILLO: And have you any idea as to the total of unused capacity in Ontario at the moment?

MR. HULL: Again, I understand it is possibly 15,000 to 20,000 barrels a day in B-A and 8,000 to 10,000 barrels a day of unused capacity in McColl-Frontenac, or Regent.

THE CHAIRMAN: Mr. Frawley?

MR. FRAWLEY: Mr. Hull, has your company made any attempt to sell Alberta crude to the Richfield refinery on the Pacific coast?

MR. HULL: Mr. Frawley, I am very



sorry I can't answer all those questions. As I pointed out before I am only pinch-hitting a bit for the production division; so I really couldn't answer that.

MR. FRAWLEY: We would have to ask the president of the producing company?

MR. HULL: That is correct.

MR. FRAWLEY: And it would be equally rhetorical for me to ask you whether you know that Sinclair, the other large owner in Richfield, had made any effort to get Alberta crude down to the refinery?

MR. HULL: I couldn't answer that.

MR. FRAWLEY: You have been, up to now, securing all of your supplies from the Montreal refinery in Canada?

MR. HULL: That is correct.

MR. FRAWLEY: How long has that been going on?

MR. HULL: Approximately three years.

MR. FRAWLEY: In other words, is it fair to say that you have been doing that while you were establishing your place in the market?

MR. HULL: Well, of course, we have been in the market for twenty-five or thirty years in Ontario; and prior to this last arrangement we had heavy crude processes done by our refineries for us. By "recently" I am talking



about a three-year operation.

MR. FRAWLEY: Is it fair to say this -- and I hope I am not presuming too much -- is it fair to say that an integrated company will not long continue buying its product?

MR. HULL: We certainly hope that we do not have to have any long buying of product.

MR. FRAWLEY: And your new refinery between Hamilton and Toronto is intended to take you out of this rather curious position in which you, as a large marketer, are buying your rproduct?

MR. HULL: Exactly right.

MR. FRAWLEY: You are going to continue to sell in Quebec?

MR. HULL: Exactly.

MR. FRAWLEY: You have service stations in Quebec?

MR. HULL: Yes, we have some in Quebec.

MR. FRAWLEY: Which you own?

MR. HULL: Yes.

MR. FRAWLEY: And which you operate by lessees?

MR. HULL: That is right.

MR. FRAWLEY: And you hope to hold the gallonage at these stations?

MR. HULL: Yes.

MR. FRAWLEY: And how are you going to get it?



MR. HULL: The product?

MR. FRAWLEY: The product?

MR. HULL: We may probably make exchange arrangements for a temporary period with other companies.. We ultimately expect to supply the product from our own refinery sources.

MR. FRAWLEY: You expect to get it down from Trafalgar Township?

MR. HULL: Yes, we hope so.

MR. FRAWLEY: By pipe line?

MR. HULL: By water.

MR. FRAWLEY: By water?

MR. HULL: Yes.

MR. FRAWLEY: You will discontinue taking any from Trans Northern as soon as you go into operation at Trafalgar?

MR. HULL: Trans Northern Pipe Line?

MR. FRAWLEY: Yes.

MR. HULL: Yes, in general.

MR. FRAWLEY: And you hope to go into the Montreal area from Trafalgar Township?

MR. HULL: We hope to do that.

MR. FRAWLEY: Is there any crude from Venezuela to come in there?

MR. HULL: At the present time it is.

MR. FRAWLEY: At the present time?

MR. HULL: Yes.

MR. FRAWLEY: That is the "present" that



Mr. White was telling us about?

MR. HULL: Yes.

MR. FRAWLEY: As of now it is certainly going in?

MR. HULL: Yes.

MR. FRAWLEY: And do you really think that you can "buck" this Venezuelan crude and turn it into product in the City of Montreal from Trafalgar Township?

MR. HULL: Well, the only alternative we have would be to build another refinery in Montreal, and we do not believe that that would be, in our situation, economic. We think it would be better to use our refinery capacity in Ontario and serve Montreal at some transportation disadvantage for the sake of lowering the cost of manufacture in the plant.

MR. FRAWLEY: That is, because you are a marketer you have a surplus, and you are willing -- I will not say "to dump" -- to take a lesser price for a portion of it in order to get into a market that would be somewhat uneconomic?

MR. HULL: We wouldn't have as economic a market in Montreal as we would have in Toronto.

MR. FRAWLEY: But the economic market would stop some place? There would be a line drawn somewhere between Montreal and Toronto?

MR. HULL: Yes.



MR. FRAWLEY: But you would want to penetrate into the uneconomic market, too, for the sake of your large unit capacity at Trafalgar?

MR. HULL: Yes.

MR. FRAWLEY: And you would be using Alberta crude for that?

MR. HULL: Obviously we would hope to use Alberta crude on the pipe line.

MR. FRAWLEY: So that you have, at the moment, nothing serious in contemplation in the way of a Montreal refinery?

MR. HULL: We have no plans for any refinery in Montreal.

MR. FRAWLEY: I think that will be all.



THE CHAIRMAN: Mr. Hull, have you told us the capacity of the refinery at Trafalgar Township?

MR. HULL: I think it is in the brief, Mr. Chairman. Our capacity is 20,000 barrels a day. That is the designed capacity.

THE CHAIRMAN: Thank you. Mr. Pattillo asked you if the Cities Service Oil Company Limited or the Canadian Cities Service Petroleum Corporation, which is the western affiliate, had a funded debt outstanding. He did not ask you whether you had any equity of either or both of those companies that was outstanding in the hands of the public.

MR. HULL: No, no equity outstanding in the hands of the public. Both of those companies are wholly owned subsidiaries.

THE CHAIRMAN: Thank you.

MR. COMMISSIONER LADNER: Mr. Hull, having in mind the useful information that you have given us just now, and looking at the situation from a Canadian point of view, what do you think of the creation of a National Energy Board in Canada? Your brief does not deal with that. In giving your answer, I would like you to keep in mind the supposition that it would be composed of representatives of business generally, the oil and gas industry, representatives of the provinces in which gas and oil have been found in quantities, the Board of Transport Commissioners perhaps, and the Canadian Petroleum Association, or, generally



speaking, supposing it was composed of people who know or have experience of the problems affecting the industry -- that is, the gas and oil industry -- from a national and provincial point of view, and I would like to add in this set-up that one of the purposes of such a Board might be to help co-ordinate the oil and gas policies of those provinces where they are entirely under provincial jurisdiction and relate those policies to Canadian export and import policies on gas and oil. I know I have a number of problems and suppositions involved, but perhaps, being a man of wide experience in business, you can grasp them all and give us your general impression of the benefits of a National Energy Board.

MR. HULL: Thank you for those fine compliments, but I purposely omitted in my brief any views on the National Energy Board, because from a corporate standpoint our company did not feel that they should take any position in that matter and therefore they have no corporate view to express. I might have a personal view, which is very simple and that is entirely aside from the corporate view, and I personally think that such a Board is not needed at the present time. I think there are adequate jurisdictional powers given to various authorities today to control the essential factors pertaining to oil and gas.



MR. COMMISSIONER LADNER: Well, the B.A. Oil Company, in its able submissions from time to time, and in the last one has made this statement:

"As we have indicated, one of the most important aspects of the situation" -- that is, the situation in respect of the production, transmission, disposition and utilization of oil and gas --

"...one of the most important aspects of the situation involves problems relating to the marketing of oil and gas . . ."

Now, you are an institution which is essentially one marketing oil and gas. What would be your comment on the viewpoint of an experienced concern like B.A. Oil Company?

MR. HULL: Might I ask, are you asking the question in relation to the assistance of a National Energy Board in marketing oil and gas?

MR. COMMISSIONER LADNER: Yes, this comment is made under what is termed 'Term of Reference'(c)' -- The extent of authority that might best be conferred on a National Energy Board to administer . . .' and so forth.

MR. HULL: I cannot personally see any help a National Energy Board could give to us, for example, in the marketing of oil and gas. I think we could do that very well on our own, and



I think that the industry has progressed very nicely over the last 10 or 15 years without any Energy Board being in effect, and I do not see how it could help the situation.

MR. COMMISSIONER LADNER: Do you think that any government regulation would be helpful to you in respect of your business?

MR. HULL: I would certainly seek none. I do not think we need any governmental regulation other than what we have now.

MR. COMMISSIONER LADNER: Thank you.

MR. COMMISSIONER HOWLAND: Mr. Hull, on page 2 of your brief you say that you made a very detailed study of the factors affecting the location of your refinery.

MR. HULL: Yes, sir.

MR. COMMISSIONER HOWLAND: I would like to take advantage of that if I could. If you do not want to answer in particular, then just say so.

MR. HULL: All right.

MR. COMMISSIONER HOWLAND: What I am really concerned about is just to help you. Say you make one decision and say British Petroleum makes another. You are both in business, I presume, for profit. If you do not make profit you have to take a loss. I am in this, again, just to help you, particularly from the point of view of the forecast that the expansion of the use of Canadian oil will be from the



Toronto area east, as against going on to Montreal, and there are price assumptions. Perhaps you could tell me -- . you could take five minutes if you like -- what the factors are which entered into your calculations, and something of the weight of those, including the matter of price.

MR. HULL: You mean what prompted our decision to locate a refinery in the Toronto area?

MR. COMMISSIONER HOWLAND: That is right. Mr. Frawley touched on this, and you mentioned the question of volume. I suspect the size of your plant is somewhat less than BP's forecast. I am not sure.

MR. HULL: That is a little larger in design than ours.

MR. COMMISSIONER HOWLAND: Therefore the size is not compelling?

MR. HULL: Not important. One of the things that was very large in our decision -- and I do not mind telling you this -- was that our historical markets for oil products had been in southern Ontario. What distribution we had was largely concentrated in that area. That was one of the factors. Another factor was the point, very important to us, that the total market within reach of the Toronto area was substantial. I think within 100 miles of Toronto something like one-third of the market of Canada could be reached. Thirdly, we were planning to go ahead vigorously and



develop Canadian crude, which we had been working on for many years without much success until two or three years ago, and with the prospects of developing a fairly substantial amount of Canadian crude we wanted to put ourselves in a position to take advantage of that production. Those three factors were probably largely determining in our location.

MR. COMMISSIONER HOWLAND: I will expose my ignorance here in trying to get what I want to get. Is it not true that the refining capacity in Montreal, in that area, has in fact served a great deal of this large consuming area of which you speak in Ontario?

MR. HULL: Yes.

MR. COMMISSIONER HOWLAND: Therefore you must be assuming that there is going to be a change in the source of the products in this Toronto area and the Ontario area. You have mentioned the whole of Ontario in your brief.

MR. HULL: Yes. We think that a good part of the Ontario area lies naturally within the orbit of Canadian crude, and we think there will be a trend sooner or later toward the backing-out of some Montreal products from the portion of this Ontario market, just due to economic factors alone.

MR. COMMISSIONER HOWLAND: I understand this. You are in agreement effectively with the Imperial Oil brief and so on?

MR. HULL: I would say so.



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7251

MR. COMMISSIONER HOWLAND: I notice in the details that you will be operating at more than capacity, according to the Imperial Oil's forecast for 1959, which will be satisfactory to you, after some undercapacity.

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What I am trying to get at now is that you have to make a relative price assumption on your decision there between the price of crude in Montreal today and tomorrow, tomorrow being a little indefinite, and the price of Canadian crude in Richmond or wherever your place is.

MR. HULL: Yes.

MR. COMMISSIONER HOWLAND: Today and at the same period in the future. Now, this must give a person some concern and you have it predicted rightly that you have been quite prepared to assume the price relationship now with the differential in favour of Montreal will not change substantially over the next five or ten years.

MR. HULL: I would assume that.

MR. COMMISSIONER HOWLAND: Am I again correct in thinking that if there were a small differential that this could be absorbed by your sister interest in the west?

MR. HULL: We think so, we think the advantages of having our own crude production would outweigh a small price differential.

MR. COMMISSIONER HOWLAND: Now, if you are wrong on the assumption of the Montreal price relationship, how far wrong will you be before you can go along with your sister?

MR. HULL: I think it is a difficult



question to answer.

MR. COMMISSIONER HOWLAND: I know it is, but I think it is quite vital because what I am getting at, you have something you catch the other way.

MR. HULL: You were asking me about how much differential in terms of cents per barrel could we stand as a premium in Ontario - -

MR. COMMISSIONER HOWLAND: And taking into account you have production where they are owned by a sister or yourself which is perfectly legitimate.

MR. HULL: Only as a guess I would say the differential would have to be somewhere in the neighbourhood of 20 cents to 30 cents a barrel for us to make a change in the source of crude.

MR. COMMISSIONER HOWLAND: It is an assumption that is to underlie an opinion on where the expansion that would use a Canadian crude was going to be?

MR. HULL: Yes.

MR. COMMISSIONER HOWLAND: I know you cannot guess within a few cents but some sensible proportion is what I was trying to get into the picture. The Commission looking at this may say 20 cents and somebody else may say \$1.50. B.P. think the market is the other way, it is



true they have some production interests.

MR. HULL: Of course, I might also point out that since we have no large foreign crude holdings we were not influenced at all in the location of our refinery, by the possible consideration of the use of that crude so foreign oil is not a question with us in determining our location.

MR. COMMISSIONER HOWLAND: Well, Mr. White told me yesterday I believe that the break-even point in cost of a refinery as between Montreal and somewhere in Ontario is in the Toronto market, the break-even point is there and you **have no back-log** of interest in western Canadian oil, you have a pretty tender - I am not telling you, you are telling me.

MR. HULL: I would be inclined to agree.

MR. COMMISSIONER HOWLAND: Thank you very much.

THE CHAIRMAN: Thank you, Mr. Hull, for your brief and for answering the questions and helping us this morning, we appreciate it very much your coming before the Commission.

We will now adjourn, gentlemen, and re-assemble, I think we can make it at 2.30 this afternoon and not 2.15 as has been the custom.

--- Whereupon the hearing was adjourned at 12.37 p.m. to be resumed at 2.30 p.m.

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7255

--- On resuming at 2.30 p.m.

THE CHAIRMAN: The Commission will now resume its hearing. Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman. Mr. Chairman, we have the Shell Oil Company who will be represented today by Mr. Hughes, the Secretary of the Company, in the absence of Mr. Ash who is in Europe, and Mr. Hughes will read to us the answers of the Shell Company to a number of questions which we submitted to the company. I do not propose to ask Mr. Hughes any questions about the answers because I previously advised Mr. Ash that I wouldn't do so. Mr. Ash told me that if it was necessary for the company to submit to further examination, he would have to postpone his trip to Europe, which was a business trip which had been long arranged. As I considered that I had addressed all the questions to the Shell Company that, in my judgment, had to be addressed, provided we got the answers to those questions which were submitted to him in writing, I told Mr. Ash there would be no necessity for postponing his trip and I would undertake not to ask any questions.

THE CHAIRMAN: I take it that is the understanding of this Commission with Mr. Ash.

MR. PATTILLO: I propose that this document be marked T-9-4.



--- EXHIBIT NO. T-9-4:

Reply to questionnaire,
the Shell Oil Company of
Canada Limited.

MR. HUGHES: This is the return of the
Shell Oil Company of Canada Limited to the
questionnaire of the Commission which was directed
to the company on June 4th, 1958, and in the return
the headings and sub-headings and the page references
coincide with those in the questionnaire so as to
relate the reply to the questions concerned.

Now, I have a copy of the questions here,
and I presume that the members of the Commission
also have a copy. Shall I proceed, Mr. Chairman,
by reading the replies as such?

THE CHAIRMAN: Thank you.

I - EXPLORATION and PRODUCTION

Saskatchewan As a Factor in Crude Production -
reference page 4485 of transcript.

Question: What are the future prospects
for Saskatchewan crude oil in the total Canadian
oil production picture?

MR. HUGHES: In our original submission
to the Commission, we pointed out the basic ad-
vantages enjoyed by Saskatchewan crude producers
in serving markets in Eastern Canada and the Upper
Mid-Continent States. In view of these advantages,
it seems likely that Saskatchewan will enjoy between
20% and 25% of total Canadian crude oil production



in the foreseeable future. In the first half of 1958, this share was temporarily increased to 27% due to the severe competition facing Alberta crude exports on the West Coast. If large new reserves were found in Saskatchewan, this would increase the possibility of that Province improving its share of total Canadian production.

Turning to the export market for Saskatchewan crude, the Minnesota and Wisconsin markets seem likely to satisfy increasing portions of their demand requirements from Canadian crude. In 1953, refining capacity in these two States supplied only 10.2% of demand, the balance being imported by product pipe line and other means, from U.S. refiners. (Table I) Canadian crude supplied 23.3% of this local refining capacity.

There is a reference to Table I, and this table is found on page 3 and it covers Minnesota and Wisconsin market for Canadian crude oil for 1953 to 1960.

By 1957, refining capacity in these two States supplied 22.2% of demand and Canadian crude supplied 71.8% of their runs. Looking ahead to 1960, we estimate that Canadian crude exports to this area will amount to 88 MB/D, representing 86.3% of crude runs in the States of Minnesota and Wisconsin.

TABLE IMINNESOTA & WISCONSIN MARKET FOR CANADIAN CRUDE OIL1953 TO 1960

| Year | Crude oil Demand (MB/D) | <u>Refining Capacity</u> | | <u>Imports of Canadian Crude</u> | | |
|------|----------------------------------|--------------------------|----------------|----------------------------------|----------------|---------------------------------|
| | | in MB/D | % of Demand | in MB/D | % of Demand | as % of Refining Capacity |
| 1953 | 293 | 30.0 | 10.2 | 7 | 2.4 | 23.3 |
| 1954 | 305 | 30.0 | 9.8 | 5 | 1.6 | 16.7 |
| 1955 | 329 | 61.2 | 18.6 | 15 | 4.6 | 24.5 |
| 1956 | 341 | 68.0 | 19.9 | 49 | 14.4 | 72.1 |
| 1957 | 352 | 78.0 | 22.2 | 56 | 15.9 | 71.8 |
| 1958 | 365 | 78.0 | 21.4 | 70 | 19.2 | 89.7 |
| 1959 | 379 | 85.0 | 22.4 | 75 | 19.8 | 88.2 |
| 1960 | 394 | 102.0* | 25.9 | 88 | 22.3 | 86.3 |

* Northwestern Refining Co. at St. Paul Park to add 17 MB/D refining capacity in 1959 of which 50% assumed to be run on Canadian imports.



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Gas Reserves and Formula for Exports
Reference page 4470 of transcript.

Question: What are Shell's suggestions
as to how a gas export formula might be devised?

MR. HUGHES: On the first graph referred to at the hearing (reference: page 4655)
Graph "A", we show two curves, which are:

1. Existing marketable reserves at any particular time.
2. Existing reserves contracted and approved for domestic and export markets at the particular time.

The difference between these two graphs is the uncommitted reserves available at the particular time for future projects. This method of analysis has several drawbacks: (1) Long-term estimates of growth of reserves and growth of markets are being compared. The difference between the two is taken to determine the amount subject to possible export. This difference is very sensitive to errors in both of the estimates. (2) The growth of reserves is quite sensitive to the growth of markets, so, in addition to possible errors in estimating, errors can be introduced by one factor influencing the other factor.

The second or suggested method represented by Graph "B", which follows, is similar in policy but restricts the issuance of permits for additional



markets to specific reserves found and contracted. It assumes that in granting permits now the reserves for long-range needs, that is, those exceeding 30 years, will be obtainable from new developments. This we think is logical.

On Graph "B", using 1960 as a reference point, we have plotted:

1. The average rate of production at which the total reserves current in 1960 could be produced over a 30-year period; and
2. The average rate of production of reserves under commitment in 1960 for a 30-year period.

The difference between these two plots, which project as straight lines over a 30-year period, gives the average rate of production at which reserves for additional projects could be produced. Also the area under these curves blocks out (a) the amount of reserves committed to approved markets in 1960, and (b) the amount of reserves available in 1960 for additional markets.

We know that additional reserves and domestic and export markets will be developed, and to illustrate the method or consideration of future permits two additional curves have been plotted, represented by -

3. The trend of the rate at which total reserves existing at any particular time could be produced over a 30-year period; and



4. The trend of the rate at which the reserves committed at the particular time could be produced over a 30-year period.

The difference between these curves (3 and 4) at a selected time can be considered as the rate at which reserves could be produced for additional projects.

In the case of Graph "B" it is not necessary to estimate for long periods into the future. The plot of the above trends could be done currently, and in the event of future project applications they could be examined. The amount of reserves found uncommitted would govern the issuance of a permit. In all cases the applications and permits are assumed to be for specific volumes over specific periods, just as in a gas contract.

This method is similar to the Federal Power Commission procedure used in the United States where the applicant shows that a market for a specific volume of gas exists, and that the reserve is available and can be contracted for. If after examination of the facts are established, then a permit for the specific volume is granted. Later on if an added volume is applied for, then the situation is re-examined and treated just as a new project. The point is that the pipe line or purchaser sets aside specific volumes of reserves by contracting for them. This is similar to the



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7262

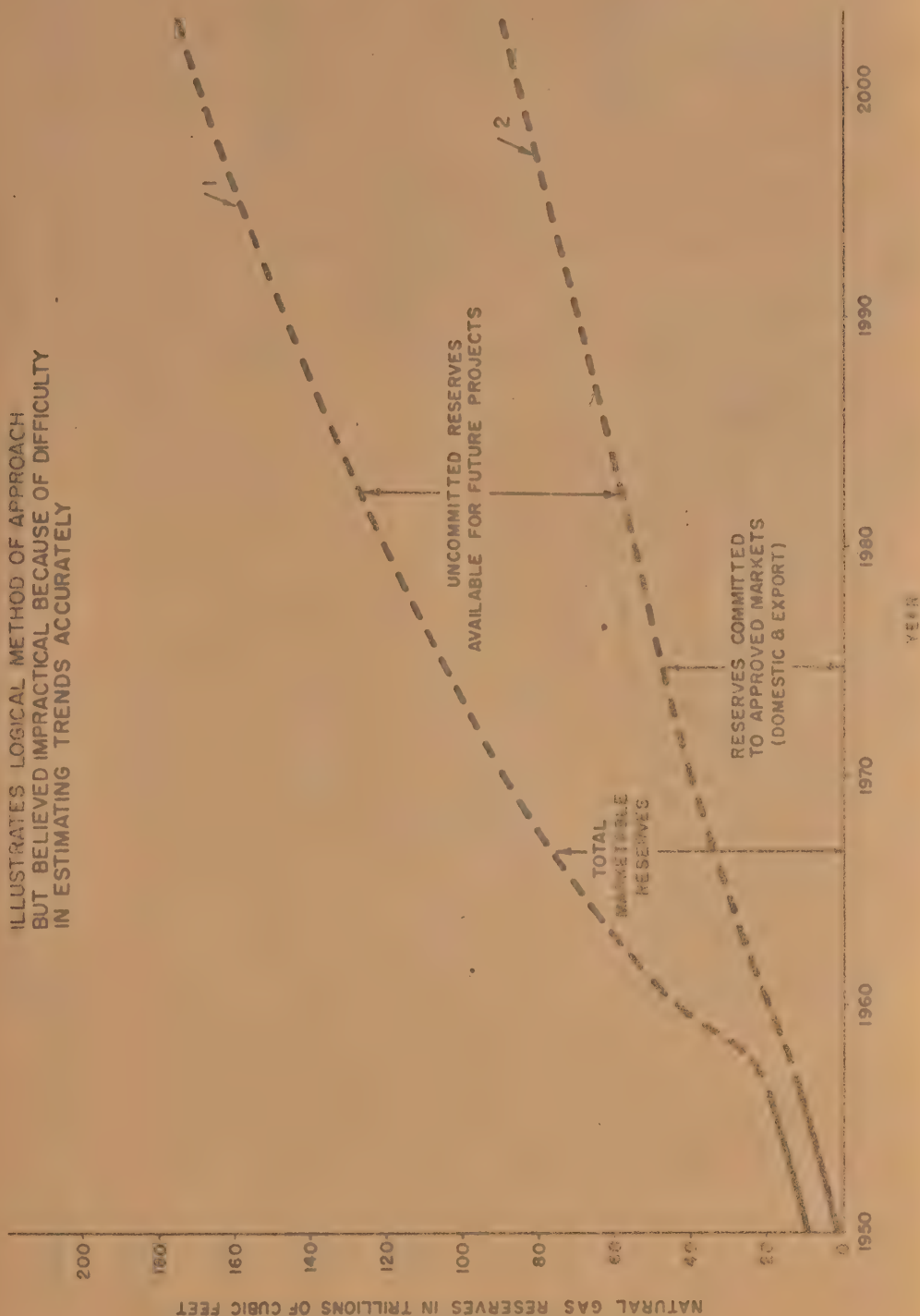
action of the Alberta gas utilities which have estimated their needs in the reasonable future and negotiated contracts for them. This is what we would expect purchasers to do, whether domestic or export needs were concerned.

The only thing we would add to this would be the examination of the adequacy of supplies for Canadian needs.

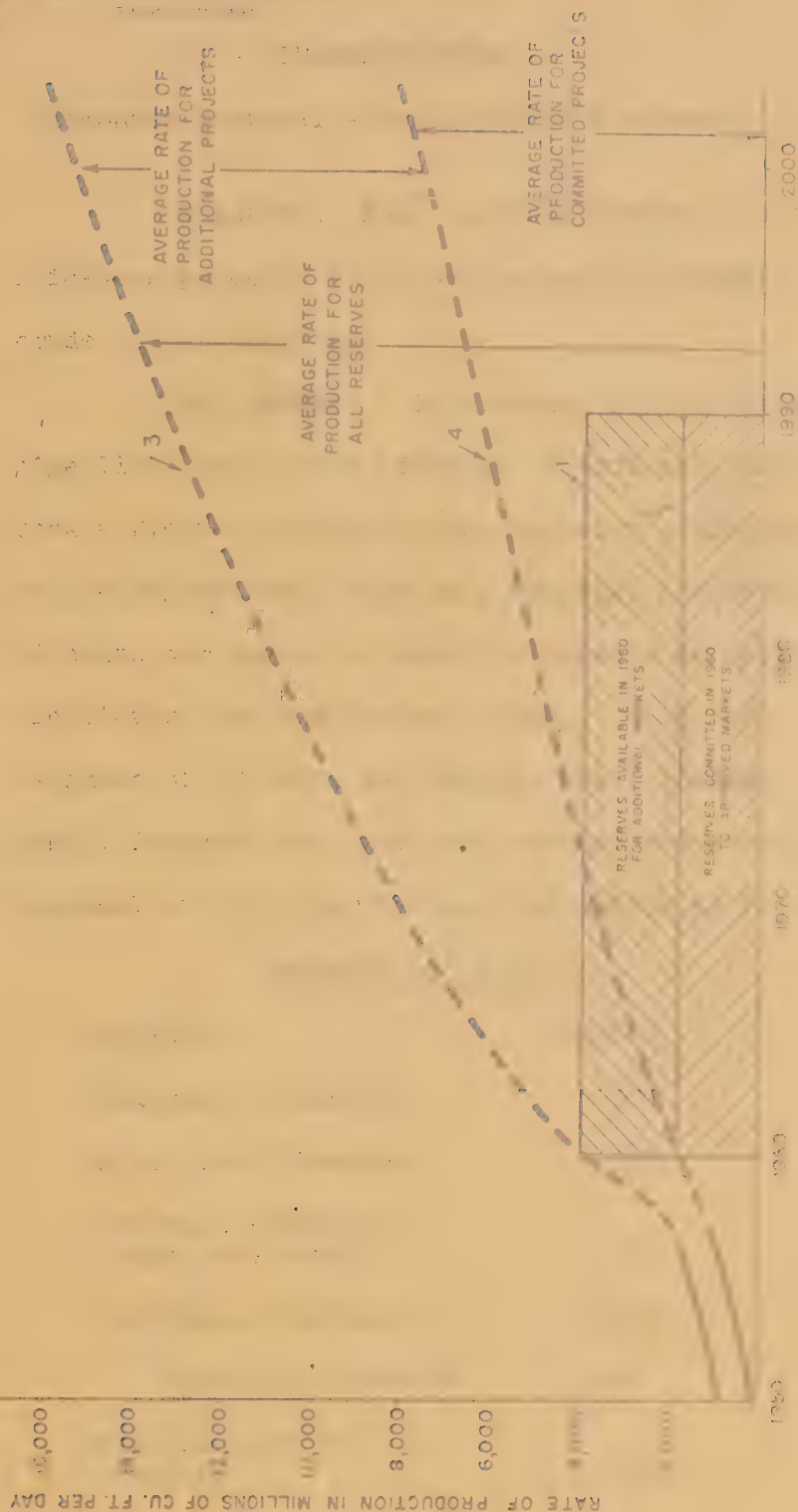
Under the plan proposed the domestic consumer could be protected by: (1) The postponement of export permits when the trend of reserve growth was stabilized or declining; (2) The active competitive contracting for gas on the part of domestic pipe line purchasers when additional needs were foreseen; and (3) By agreements between exporters and the domestic utilities for pipe lines assuring that the domestic market will receive priority in the event supplies fail or are not available.

GRAPH "A"

ILLUSTRATES LOGICAL METHOD OF APPROACH
BUT BELIEVED IMPRACTICAL BECAUSE OF DIFFICULTY
IN ESTIMATING TRENDS ACCURATELY



ILLUSTRATES METHOD USING CURRENT RESERVES AND COMMITTED RATES OF PRODUCTION





II - TRANSPORTATION

Edmonton-Montreal - Page 4569 of Transcript

Question: How did Shell arrive at a laid-down price of \$3.34 per barrel of Alberta crude oil at Montreal?

MR. HUGHES: In arriving at the estimated pipe line tariff from Edmonton to Montreal, Shell took a figure of 70 cents per barrel provided by the Interprovincial Pipe Line Company, and deducted 10 cents per barrel in order to present an optimistic picture for the Western crude. With this estimate of 60 cents per barrel, Shell independently forecast the laid down cost of Redwater at Montreal at \$3.34 per barrel, calculated as follows:

Redwater 35⁰ A.P.I.

| | |
|---|-------------------------------|
| Wellhead | \$2.560 |
| Charges to Edmonton | .089 |
| Pipe Line Allowance | .026 |
| Canadian Section of Pipe Line Tariff | .350 |
| Additional Charges (1) | <u>.075</u> |
| Sub-total Canadian | 3,100 |
| Pipe Line Tariff U.S. Section | .250 |
| Canadian Equivalent at 3% | <u>.242</u> |
| Total Canadian Funds | \$3.342 Laid Down Montreal |

(1) Includes cost of servicing idle Portland/Montreal Pipe Line, plus loss of return on investment in that pipe line, plus interest on additional capital in inventory in Edmonton-Montreal



Pipe Line.

Reference page 4498 of transcript

Question: In the opinion of Shell Oil Company, what steps would be required by government to enable the financing of an Edmonton-Montreal pipe line?

MR. HUGHES: Unless the Montreal refiners voluntarily signed throughput agreements, the Federal Government would find it necessary to restrict imports of foreign crude oils by artificial means. The implications of such measures have been referred to in our original submission. Imported crude oil would have to be cut off either by quotas or by complete physical embargo, either of which would possibly have repercussions on Canada's international trade position.

If quotas were elected, the proposed pipe line would not supply the whole Montreal market, and the lower the pipe line throughput, the higher the tariffs required. A complete embargo could be set to keep out imported crude and thereby devoting the entire Montreal market to domestic producers. But the financial viability of the proposed pipe line needs more than the assurance of domestic crude to be used by Montreal refiners. Montreal must be dedicated to crude from Western Canada if sufficient tariff revenue is to be



generated to service the financial burden, and it therefore follows that, not only would imported crude have to be cut off, but all present or future domestic sources, except Western Canada, would have to be denied the Montreal market.

Thus, the implementation of the crude line to Montreal would necessitate the setting up of Government controls of the industry's largest refining centre, the ultimate effect of which might well be to require the extension of such controls over most of the industry.

Tankers

Reference page 4495 of transcript.

Question: What data can Shell Oil provide on the cost of tanker movements on the St. Lawrence and Great Lakes?

MR. HUGHES: The information filed below summarizes the economics of deep sea tanker operation in the Great Lakes. Shell of Canada operates T-2's, but all three classes of vessels specified have drafts in excess of the maximum afforded by the Seaway system; consequently, less than capacity cargoes would be carried. In addition to these higher costs due to light cargoes, such movements would only be possible for seven months of the year and considerable storage facilities would be required to carry the refineries over the closed season.



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7266

TANKER TRANSPORTATION OF CRUDE OIL
SUPERIOR OR SARNIA TO MONTREAL

1. VESSEL PARTICULARS

| | T-2 | B.A. Peerless | 10/12,000 Tonner |
|----------------|---------|------------------|---------------------|
| Length Overall | 524 | 620 | 483 |
| Draft | 30'-2" | 26'-7" | 27'-6" |
| D.W.T. | 16,540 | 18,360 | 11,837 |
| Tons/Inch | 67 | 84.5 | 56 |
| Cargo Capacity | 138,000 | 149,000 | 104,000 |
| Average Speed | 13 Kts | 14 Kts | 12 Kts |

At Assumed Draft
(max.) 25'-6"

| | | | |
|--------------------------|-------|-------|-------|
| Loss in D.W.T. | 3750 | 1100 | 1340 |
| Canal D.W.T. | 12790 | 17260 | 10497 |
| Crude Cargo (M Bbls.) | 88 | 122 | 71 |

2. SAILING DISTANCES

| | |
|-------------------|------------|
| Montreal/Superior | 1332 miles |
| Montreal/Sarnia | 658 miles |

3. UNIT COSTS ϕ /Bbl. TO MONTREAL (Exclusive of Canal Tolls)

| | Ex. Superior | Ex. Samia |
|---------------------|---|--|
| T-2 | $\frac{11 \text{ days} \times \$3,000/\text{day} = 33\phi/\text{bbl.}}{38,000 \text{ bbls.}}$ | $\frac{7 \text{ days} \times \$3,000/\text{day} = 24\phi/\text{bbl.}}{80,000 \text{ bbls.}}$ |
| B.A. Peerless | $\frac{11 \text{ days} \times \$3,500/\text{day} = 32\phi/\text{bbl}}{122,000 \text{ bbls.}}$ | $\frac{7 \text{ days} \times \$3,500/\text{day} = 20\phi/\text{bbl}}{122,000 \text{ bbls.}}$ |
| 10/12,000 Tonner | $\frac{13 \text{ days} \times \$2,500/\text{day} = 46\phi/\text{bbl.}}{71,000 \text{ bbls.}}$ | $\frac{9 \text{ days} \times \$2,500/\text{day} = 32\phi/\text{bbl.}}{71,000 \text{ bbls.}}$ |

To include the recently announced Seaway Canal Tolls, add 7 ϕ /bbl.



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Pipe Line Jurisdiction and National
Energy Policy - Reference Pages 4450
and 4673 of transcript.

Question: What views does Shell Oil
have on the regulation of oil and gas pipeline
rates and on the matter of pipeline jurisdiction
as between the federal and provincial governments?

MR. HUGHES: The question with reference
to page 4678, to which page 4660 is related,
raises issues of wide scope and the greatest im-
portance. We are studying these issues closely
in the hope that we may later be able to offer
useful submissions to the Commission. Our posi-
tion has been explained to and is appreciated by
the Commission staff.



III - PETROLEUM REFINING.

Refinery Yields as a Function of Crude Types -
Reference Page 4581 of Transcript.

Question: What will be the effect of
natural gas on the market for fuel oil?

MR. HUGHES: Shell's study of the effect
of natural gas in Eastern Canada is still not
complete and the findings will be forwarded to the
Commission as soon as they are available.

Question: Why is 30-31° gravity crude oil
considered to be most suitable in Montreal refining
operations?

MR. HUGHES: Montreal refiners currently
use 30° A.P.I. crudes in order to minimize middle
distillate imports. By switching to a lighter
gravity feed stock, such as Redwater, crude runs
could be reduced to satisfy gasoline demand and,
consequently, distillate imports would have to be
increased. But, if natural gas displaces some
of the heating fuel demand, this would offset the
need for more imports, depending upon:

- a) Total crude run which is a function of gasoline demand.
- b) Distillate yield.
- c) Competitive effect of natural gas.

If crude runs were reduced because of
higher gasoline yield from the lighter gravity crude,
the lower throughputs would mean higher unit operat-
ing costs and higher product prices.



In the case of Shell's Eastern Canada operation, our proposed Bronte refinery will be designed to run lighter gravity Canadian crude. The higher gasoline yield from this operation will take this effect of natural gas into account. The production from Bronte will actually be complementary to our Montreal East Refinery output in that the higher gasoline yield will mean moving some distillate products from Montreal to balance our supply position in Ontario. This movement will be on a much smaller scale than required by our present distribution pattern. Operation of both Bronte and Montreal refineries on light gravity crude would result in a shortage of distillate and thereby increase import requirements during the next few years.

Refinery Margins & Montreal Product Pricing -
Reference Page 4571 and 4494 of Transcript.

Question: In its previous submission, Shell stated that the imposition of a tariff on crude imports would be reflected in higher product prices in the Montreal refining orbit. Please explain this, with reference also to the matter of refinery margins.

MR. HUGHES: The process of refining crude oil is basically the separation of the various component substances into marketable products or into raw materials that may be combined or



reformed into new substances. Any basis of allocating the cost of the crude among the various end products can only be arbitrary and can have no real value as a determinant of the relative or absolute cost of such products. The refiner makes no attempt to calculate such costs except for the purpose of putting some arbitrary values on his inventories and thus forming an acceptable basis for determining profit in total, but not product by product. As a result the refiner calculates the profitability of his operating alternatives by working at the problem from another direction. He calculates the total selling value of the products he proposes to make as governed by his anticipated sales and subtracts from this the cost of crude and refining. The difference is the profit he expects to realize. Within the limits of flexibility offered by his equipment and the market for his products he can alter the product mix so that in combination with the refining costs appropriate to each case he can achieve the most profitable use of the crude. By similar trial and error he selects the crude that will provide him with the most satisfactory result although in this computation he will also have to take into account the cost of the various crudes available to him.

A. Shell of Canada is a private company we would prefer to make no public statement regarding



profits. Nonetheless, we did give a copy of our audited financial statement for 1957 to the Chairman for his personal review and from it he will be able to satisfy himself that the profit earned by the company having regard to the amount of capital invested is of modest proportions. We have no refinery in Ontario and cannot assist the Board to compare relative margins in Toronto and Montreal. We can say, however, that our business in Canada in 1957 may be subdivided into three separate parts. These are:

- (1) the refining and marketing complex based on our refinery in Montreal and serving our markets in Ontario and Quebec;
- (2) the refining and marketing complex based on our refinery at Vancouver and serving our markets in British Columbia; and
- (3) the operations in Alberta based on the Jumping Pound gas field.

Our operations based in Montreal provided a rate of return approximately equal to that earned by the company in total. Accordingly, it will be evident that we are not deriving an abnormal profit from our Montreal Refinery, and if an increase in cost of crude of the order visualized were to be experienced it would be most difficult for us to absorb it.



Reference Page 4579 of Transcript.

Question: What would be the effect on petroleum product prices in Montreal if Canadian crude was to be used in that refining centre?

MR. HUGHES: In a refinery economy, such as Montreal, product imports are the most economical method of balancing the supply position. If refiners reduced imports of distillates by running more crude, the excess gasoline made would create difficult and costly storage problems. With the high heating oil demand in Eastern Canada, most refiners do not have the flexibility to produce sufficient distillates without a surplus of unsaleable gasoline. If import quotas below supply requirements are applied, the Montreal refiners will be denied the import means of balancing their supply positions, and the inevitable outcome will be a higher cost operation. Obviously, if it were possible economically to manufacture more middle distillate products in order to eliminate imports, the refiners would already be doing so. Thus, if product imports were denied, higher cost of operation would be inevitable.

IV - MARKETS.

Puget Sound Market - Reference Page 4555 of Transcript.

Question: Although Canadian oil is competitive in Puget Sound in the current period of inventory surpluses, it is losing out, because of commercial relationships, to California crude oil



and other crudes. What is the supply outlook in the Puget Sound area over time?

MR. HUGHES: We agree that the existence, as at present, of surplus crude or products in California, the most economical disposal area for which is the Pacific Northwest, does militate against Canadian crude imports into that area.

However, forecasts of forward supply and demand in California suggest that the present situation is temporary and that the area will become increasingly deficient in indigenous crude. Imports into Puget Sound of non-Californian origin will therefore be required; the sources from which such imports will be drawn will depend on a number of factors, including price and level of tanker freight rates prevailing at the time.

Processing Agreements for Product Supply -
Reference Page 4611 of Transcript.

Question: In the initial hearing Mr. Ash mentioned, as a short-term possibility for improving the crude oil production outlook, the idea of entering into processing agreements or buying products in Ontario which are now supplied out of Montreal. This was mentioned by Mr. Ash as a short-term possibility "in the mind" and so far as Shell is concerned, has not yet been developed beyond that point.



World Oil Pricing _ Reference Page 4549 of Transcript.

Question: How dominant is the U.S. Gulf price in the world oil pricing picture?

MR. HUGHES: Shell has subsequently submitted to the Commission a comprehensive review on "The Price of Oil" to which we cannot add at this time.

Strategic Aspects of the Montreal Market.

Question: What comment would Shell wish to make with respect to strategic aspects of Montreal crude oil supply?

MR. HUGHES: In the event that crude oil from sources other than the Middle East is available for seaborne import into Montreal, the facilities available today are better than those at the beginning of World War II, by reason of the construction of the Portland-Montreal Pipe Line. If marine movement of crude oil to Montreal was cut off by another major war, the inevitable outcome would be a North American continental oil policy. In this event it might not be in the best interests of Canada or the North American continent to have a large portion of Western Canadian crude production dedicated to Montreal.

That, Mr Chairman, is the submission.

THE CHAIRMAN: Thank you very much indeed, Mr. Hughes.



Mr. Frawley?

MR. FRAWLEY: Mr. Chairman, what I am going to say now is said with a very real regard for the courtesy which I have received from the Commission.

I certainly would not have objected, if I had been consulted by the Commission, as to Mr. Ash going off to Europe because he had to go on an important business trip. I know that my friend, Mr. Hughes, whom I knew when he was an eminent member of the New Brunswick Bar, is not, perhaps, qualified and is not here today to be subject to my examination on this brief.

That is right, is it, Mr. Hughes?

MR. HUGHES: I am not a technical-operation man.

MR. FRAWLEY: So I propose, naturally, to ask no questions. I am bound just as much as my friend, Mr. Pattillo -- and I have to emphasize that I have no objections -- but I do want to say that there are things in this brief that I would have cross-examined Mr. Ash about if he were here.

For instance, Mr. Ash says in his Table No. 1 that Western Canada will put 88,000 barrels a day into the Mid-West in 1960. The Conservation Board says between 53,000 and 58,000. That is a very, very considerable difference. That is one thing.

This brief, again, talks about the comparative



profitability of the refinery in Montreal and the refinery in Toronto. I challenge that. Certain. it is that they have given to the Chairman their profit position, and that only a modest -- that equivocal word -- profit emerges, and I don't quarrel with that. But what has that got to do with what I am talking about? I am talking about the ability of the Montreal refinery to pay the landed cost of Venezuelan crude, that we have had in evidence, as against the ability of the Ontario refinery to pay the landed cost of Alberta crude.

I am talking about the comparability of the Canadian refinery to take crude in and not increase the range of product price.

If it sounds like making a speech when I shouldn't be making speeches, I am sorry. I just want to express my great regret that Mr. Ash isn't here; but I am sure that he has more important business.

I am pleased to see that he has come out frankly and told us that the Puget Sound area, which actually, physically, receives our oil -- that the pipeline running into the Puget Sound area is now coming from British Borneo.

However, as I see it, it may be that there will be no alternative but to bringing Mr. Ash . . .

MR. HUGHES: I think, possibly, I might say that Mr. Ash advised me to inform the Commission



that he is prepared to return at any time if his presence is required for cross-examination, and that he will fly back if he is required.

THE CHAIRMAN: I don't think Mr. Frawley means what he says just as seriously as the bark sounds.

We did take that into consideration. It was an important, long-months-ago-arranged trip, and it is a matter of relativity; and I don't think it is fair to imply to Mr. Ash's mind that his business in Europe is of more importance than appearing before the Commission; and I am sure that you didn't mean it in that way, Mr. Frawley?

MR. FRAWLEY: I surely didn't.

THE CHAIRMAN: But he did make it very clear that if there was the slightest reason why we wanted him here to answer questions he would return immediately by plane. But I don't think you really want that, do you, Mr. Frawley?

MR. FRAWLEY: No, I don't -- for this reason, that this isn't a law suit. I am in the hands of the Commission, and I will say publicly that I couldn't be in any better hands. So I am not asking for that.

THE CHAIRMAN: Thank you very much indeed, Mr. Hughes.

Mr. Pattillo?



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7279

MR. PATTILLO: Mr. Chairman, we now are going to hear from an individual, Mr. Cyril T. Young, who is a Canadian and who has seen fit to submit a brief to the Commission.



Submission By
MR. CYRIL T. YOUNG

MR. PATTILLO: Mr. Young is a very great Canadian who has made a great contribution in the past to a lot of development in the north of Ontario, who I understand probably more than any other person is entitled to the credit for the location of the route of the Trans-Canada Pipeline through the northern part of the province. I think that Mr. Young is to be commended as an individual for taking the time and at his own expense going to the trouble of preparing this brief and coming here to listen to us. Mr. Young, would you come over here to the table? I would like to have the brief marked T-9-5.

---EXHIBIT NO. T-9-5: Submission by Mr. Cyril T. Young.

MR. YOUNG: Mr. Chairman, I was unaware that I was going to be called when I came here today. I had other copies of the brief. However, in order to make some progress, at different points of this I am going to ask that it be taken as read, so as not to delay you any longer. I may say that I was here for a day or so and I listened with careful attention to what was submitted in briefs, and I have the highest regard indeed for your own Royal Commission. It has been my own good fortune or bad fortune in the past to have been up before



various Royal Commissions, like the one when the Canadian Northern was taken over by the Canadian National, when Judge Meredith was in charge.

Canada, our Canada, the best country in the world to live in has a greater future in oil and gas than any other of her natural resources. The author of this brief to the Borden Commission became interested in natural gas and pipeline after traversing the proposed pipeline route between Nipigon and Sudbury along the rocky shores of Lake Superior.

Because of my knowledge gained through many years of exploration throughout the Northern country as Superintendent of Resources Development across Canada under Sir Henry Thornton for years, I was of the fixed opinion after months of examination which I was never paid for by anyone, that the original route proposed by Trans-Canada along Lake Superior was one that should be abandoned because I knew a better pipeline location. I felt justified, after examination, in filing with the Board of Railway Commissioners, sometimes called the Transport Board of Ottawa, an alternative route for adoption between Port Arthur and North Bay. The hundred or more large scale photographs filed with the Transport Board by me showed the long tangents of No. 11 Highway adjacent to which I proposed the pipeline be laid due to the favourable nature of the country and availability



of No. 11 paved Highway for hundreds of miles, where patrolling the line could be successful. Many of the photographs showed the rough topography of the mountainous country adjoining Lake Superior in comparison with the Clay Belt route filed which Trans-Canada finally adopted.

Surveys by Trans-Canada had then exceeded \$2,000,000 in cost. The change of route I advocated covered a length of approximately 600 miles. Our "sales potential" for natural gas while almost non-existent on the Southern Lake Superior route was extensive on the now well-known Northern route with its Towns, Cities and Industries.

The Northern Ontario Natural Gas Company was incorporated on May 6, 1954, under the laws of the Province of Ontario, for the purposes of constructing and operating natural gas distribution facilities for industrial, commercial and residential use in communities located in the Province of Ontario. The Company has contracted to purchase natural gas from Trans-Canada at various points in Ontario along Trans-Canada's pipeline route, for distribution by the Company and by Twin City Gas Company Limited, an Ontario Corporation serving the Head of the Lakes, of which subsidiary a large proportion of the outstanding stock is owned by Northern Ontario Natural Gas.

Contracts were made with some 26 municipalities



and plants and were obtained from points across the Northern country from Port Arthur Eastward, which I helped to secure. Later several other municipalities, including Port Arthur, Fort William and the Paper Mills, were secured by Twin City Gas Company operating between Kapuskasing and Kenora on what was known as the "Crown Section" of the Trans-Canada construction between Kapuskasing and Kenora on which a loan of Eighty million dollars was made to Trans-Canada by the Dominion Government. It now is and always was foolish for Ottawa opposition to worry about this Eighty million being repaid by Trans-Canada. (It was stated the other day by my friend, Mr. Coates, that it was going to be repaid shortly.)

AVAILABLE GAS RESOURCES. (This report was made by me at the end of January; so you will understand, when you hear it read, that that should be taken into account.)

Backing the whole of the Trans-Canada project is the fact that it was estimated by the Alberta Government that there was 23 trillion cubic feet of natural gas available in Alberta, recently greatly increased, as data herein will outline. Men who know, state that natural gas and oil is only 15 per cent developed in the West where oil and gas production so frequently go hand in hand together as is well known. In the last five years



the proven reserves of Alberta's Natural Gas have increased from 4.7 trillion cubic feet to 18.3 trillion cubic feet, so it was, therefore, safe for Alberta to allocate 4.35 trillion feet to Trans-Canada, as was done to meet their sales potential in the East. This supply of gas is sufficient to service all the 20-year gas sales contracts now signed by Trans-Canada Pipe Lines.

Again let us keep clearly in mind that the gas finds are frequently made "incidental" to the search for oil, and until West Coast Transmission and Trans-Canada Pipelines were financed for construction and markets, there was little incentive to keep on developing gas areas in Western Canada. In fact it had been common practice to cap any gas wells discovered and to abandon the field meantime, while continuing the search for oil by drilling elsewhere. We all recollect how gas flamed and burned around Calgary for years.

The Canadian market promises to use at least 130 billion cubic feet of gas per year in the fifth year of the operation of Trans-Canada. Another desirable feature of the markets in the East is that there is enough potential industrial load which can be economically served by natural gas branch lines to ensure that 95 per cent or more of the capacity of the main pipe line will be in continuous use.



Gas storage in Ontario will always be one of the difficulties of Trans-Canada and lessees, but extensive underground storage at Dawn and elsewhere in Southern Ontario by the Union Gas Company of Chatham, which is not only a very efficient company, but looks ahead with vision, may provide some storage for Trans-Canada's use, which is only possible where gas was previously produced and now forced back under heavy compression pressure.

The diameter of the main pipeline to Winnipeg which is 34", is 30" on the section of line from Winnipeg Eastward to and beyond North Bay-Sudbury area. What is very important is that this one pipeline will deliver four times the equivalent energy as will be generated by the St. Lawrence Electrical Power Development Seaway and now gas will be made economically and compatibly available to one-third the population of Canada coming over a route approximately 2,300 miles long from our Canadian West.



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Due to the fact that oil and gas "flows" through pipelines with booster stations along the route, the cost of fuel in the North country at points such as Hearst and Cochrane for example, will be around one-third less than the present \$30.00 per ton cost of the coal to that section from Scranton. Then due to the fact that coal has to "roll" on the railways instead of "flow" in pipelines, the freight haul increases in cost on account of increased rail wages and other costs making for "ever-higher" freight rates yearly, lessening coal sales potential.

When I was with the Canadian National railway as Superintendent of Resources and Development from Coast to Coast rates were second nature to me. I had to know them whether they were rail rates; lake and rail; or ocean; so ocean rates on oil coming through tankers is something that I am interested in.

NECESSARY STATISTICS: What we call our mineral fuel production was one hundred million dollars higher in total value in 1956 than in the preceding year. Crude petroleum output of 170 million barrels was valued at nearly 402 million dollars. Alberta's production increased by 31 million barrels to reach 144 million barrels while Saskatchewan has 70% increase to 10 million barrels and Manitoba's volume of oil increased 43% to 5.9



million barrels. Using comparisons, the volume of natural gas utilized less waste, was 173,260 million cubic feet. The decline that had been going on in coal output over several years was slightly reversed and in 1956 there was a small increase in the quantity produced of 14.9 million tons.

Meantime the total mileage of oil pipelines operated in Canada rose to 6,051 miles in 1956, an increase over the previous year of 972 miles being 19%. At the same time gathering systems of 1,405 miles were up 58.3% over 1955, all of which increases create food for thought and are quoted because the author again makes the statement that oil production and gas production and markets must go hand in hand as a result of expansion in existing facilities and markets. The addition of new lines, the total cost of property and equipment installed is quoted at \$360,718,385.00 in 1956, an increase of 14%, again food for thought in Canadian resources development.

Operating revenues for the year amounted to \$78,213,744.00 an increase of 32% while operating expenses rose to \$29,387,707.00 an increase of 23%. Operating income went up 51% to \$48,807,037.00 and valuable information is that income tax deductions in 1955 rose to \$21,546,974.00 yet income tax at \$18,710,113.00 was 55% above the tax of \$12,103,512.00



reported for 1955, all of which we shall have to have before us to evaluate what this gas and oil industry means to Canada. It is the greatest of all our potential natural resources. Taxes must be lowered to find home and foreign markets and invite Risk Capital to develop.

In the discussions going on as to who owns what, in oil across Canada, this is the place to state the information that at present time six of the largest major companies - Imperial Oil Limited; California Standard Company; Shell Oil of Canada Limited; B.A. Oil Company Limited; Texaco Exploration Limited and Mobile Oil of Canada - hold between them about 40% of the gross acreage under lease in Western Canada and at the same time control about 3/4 of proven oil services in Canada.



WORLD OIL RESERVES: The World crude oil reserves in millions of barrels in 1956 is something not only the Borden Commission should have submitted to it in a brief, but every Canadian should study. It stands as follows:-

| | |
|--------------------|--------|
| Saudi Arabia | 40,000 |
| Kuwait..... | 50,000 |
| Iraq | 15,000 |
| Iran | 26,000 |
| Quatar..... | 1,500 |
| Bahrain | 175 |
| Others..... | 526 |

| | |
|-------------------------------|--------|
| United States..... | 30,250 |
| Canada | 3,000 |
| Other Western Hemisphere..... | 16,552 |

| | |
|--------------------|--------|
| Rest of World..... | 17,427 |
|--------------------|--------|

200,431

of which total the Middle East has 133,201 million barrels - Food for thought. Russia's favourable areas are amazing in size comparably and it is high time, considering what our combustion engines and our flying units require, that we in Canada wakened up and studied charts such as the above. Let's climb the Hills, catch the vision and plan accordingly.

SINCE 1947 THE RATE OF NEW CAPITAL INVESTMENT IN ALL PHASES OF THE OIL INDUSTRY IN CANADA HAS CLIMBED OVER 48 TIMES from \$1,000,000 a month to over one-and-a-half million dollars per day. Over the next 10 years a total new capital investment of at least eight thousand million dollars will



likely be needed by the oil industry in all its departments. WE CANNOT, THEREFORE, DO WITHOUT RISK CAPITAL, AND ACROSS OUR NIAGARA, ALWAYS MORE BOND THAN FORTRESSED BOUNDARY, OR THE 49TH PARALLEL, WE MUST CONTINUE TO GIVE AMERICAN RISK CAPITAL CORDIAL WELCOME TO CANADA. Our Canadian capital stays in our banks and does not serve as "risk capital" to any marked degree such as is necessary to our future. Canada must abandon her tight money policy, and not only the Bank of Canada's President, but every name on that Board needs close scrutiny. We need makers of Canada on that bank board. Nor can Canada progress without enough active stock exchanges and only freer money is going to make risk capital available - - make no mistake about that.

COMPARISON ON ENERGY SUPPLY: Estimating carefully Canada's changing energy supply for future consumption, Coal use is estimated by Trade and Commerce experts to extend only 1.3 times in volume in the period of 27 years between 1953-1980; Oil to extend 3.3 times in that period of 27 years; Water Power to extend 4.1 times between 1953-1980, 27 years; and all other energy up 1.4 times except natural gas use which will extend 18 times from 1953-1980, 27 years. When it is noted that all others, including Nuclear energy, Atomic energy and Forest fuels extend only 1.4 times in the 27 years



ahead, then one can see at a glance the importance of Natural Gas energy in the future of Canada. * It is estimated by experts in the Trade & Commerce Department of Canada and recently published by the Bureau of Statistics, that by 1980 the following will be the ratios of the various energies used in this Canada of ours:-

| | |
|---------------------|-----|
| Atomic Energy | 2% |
| Wood products | 8% |
| Water power..... | 11% |
| Coal | 16% |
| Natural Gas..... | 25% |
| Oil..... | 45% |

The cost of reactors in atomic energy will price atomic energy in volume competition out of the picture except in insular countries like Britain - all of which affords us food for thought. Cheaper reactors such as Canada is now building and U.235 (Uranium) in quantity is the answer and it will come yet.

CANADA'S CHANGING ENERGY SUPPLY: (each source as percentage of total energy)

| <u>Energy Source</u> | <u>1926</u> <u>(Actual)</u> | <u>1953</u> <u>(Actual)</u> | <u>1980</u> <u>(Est.)</u> |
|----------------------|--------------------------------|--------------------------------|------------------------------|
| Coal | 69 | 39 | 16 |
| Petroleum | 10 | 42 | 45 |
| Natural Gas | 2 | 4 | 25 |
| Wood | 16 | 7 | 1 |
| Water Power | 3 | 8 | 11 |
| Nuclear energy | -- | -- | 2 |
| | <hr/> | <hr/> | <hr/> |
| | 100 | 100 | 100 |



CHEAP POWER IS THE HEART OF INDUSTRY:

Abundant energy is the life blood of an industrial economy especially where, in a country like Canada, we have to know that the power is behind our plants and industries if we are exporting under contract to foreign countries. The one thing about power behind industries that has made Canada famous has been Hydro Electric Water Power generated from falling water.



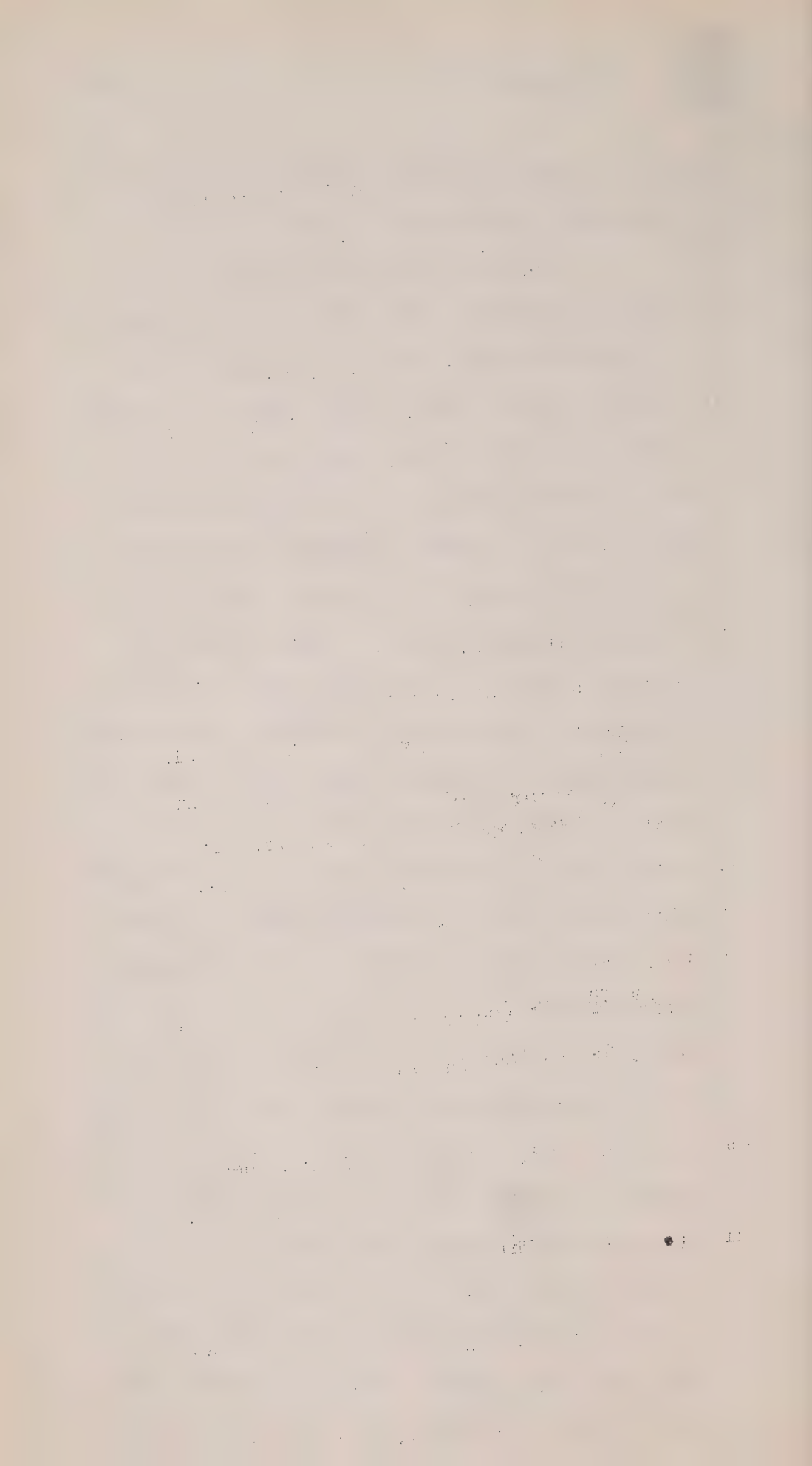
I am not endeavouring at any place to underestimate uranium or atomic energy, but the fact nevertheless is that except for inland countries atomic power is never going to match either water power costs or natural gas costs. It falls on one's ears strangely that atomic power may be developed close to coal deposits and with its assistance, when one realizes that water power has never gone on strike and that coal -- page Lewis -- has been going on strike so much that any atomic energy it will furnish fuels for to produce will not have the stability of industrial power from water power or from natural gas.

Nor should it be forgotten that this North American Continent has the highest per capita consumption of energy plus the highest standard of living in the world and water power has been one of the fundamental causes of our success to export cheaply while at the same time paying almost the highest wages to labour in the world. Let us in balancing our objectives deliver to the gas hungry Northern Central States market, gas from Emerson, if we can, more economically than they could buy gas from Texas or Oklahoma. Meantime let us absorb the fact so important that the proven reserves of gas in the U. S. have dropped from -- these are published statistics -- a 40 years' supply quoted in 1940, to their now estimated at only 22 years'



supply at the end of 1956, something to really think about or Canadians to know.

Important Dry Process on Iron Ore and Future Gas Markets: The Ontario Research Board (50 per cent Ontario Government backed and the other 50 per cent Manufacturers Association) have built what is more than a small pilot plant at Malton where tonnage tests of Canadian shipments as well as from Norway and Sweden, are made on a formula that through a dry process treats magnetite and hematite ores. This formula is a definite success. The process will result in a larger plant being put up in Northern Ontario using natural gas because natural gas has "elements" in it as an energy fuel that does not all exist in coke, coal, oil or hydro power. Also this plant has nothing to do with making elemental sulphur out of iron sulphides such as natural gas alone makes possible --I mean you can't do it with coal. Keeping in mind that we imported \$80 million of sulphur from Texas and Louisiana part yearly some coming up the Missouri by boat to Chicago, then by water to the Sault and by rail on to Cutler C.P.R. at which point (Elliot Lake) we now treat our U.235 (Uranium ore). This formula in iron will result in the use of more natural gas, due to our huge iron ore ranges. Let us not forget that many of the iron ranges are on the route of the





gas pipeline now being built between Port Arthur and the East, which new route to the North is filed with the Transport Board, Ottawa, covering several hundred miles of pipeline now being constructed.-- and that is all under construction. I may add that there were 5,000 men working on that last week.

Let's be big enough Canadians to agree that while we cannot use all grades of steel here until we have greater population than 17 million people, yet the shipping of raw iron ore out of Canada must lessen. Allied with this mining and metallurgy of iron is bound to come, like it already has at Consolidated Smelters, a plant for the manufacture of fertilizer; especially for the Clay Belt, because fertilizer from iron sulphides is a warmer product for it germinates seed faster than other fertilizers, in cold short seasons like our Clay Belts across Northern Canada.

Again I briefly state that the more one studies this natural gas energy, which according to experts like my friend Dr. Davis, formerly of the Trade and Commerce Department, Ottawa, estimates it will by 1980 pyramid in use 18 times, we have all got to be bigger Canadians and catch the vision through knowledge of what is now actually happening like this new research iron success and as this



Borden Commission on energy, etc., will study and advise the Dominion Government.

Power is the heart of industry and if our Premier has the vision I feel he has, we are going to head into this particular metals development where for instance in this case we have the market developed going hand in hand with our U.235 (Uranium) development from risk capital in four of the largest Elliot Lake mines coming through Rio Tinto and its major British Capital. In the not far distant future the 15 per cent trade with Britain could become a low estimate and is a definite move in the right direction to build Canada and balance our national debt yearly.

Natural Gas Pipeline Greatest Exploratory Achievement since C.P.R. and C.N.R. Railway Building.

Nothing since the building of our Trans-Canada railways means so much to Canada as this Trans-Canada Pipeline. Next could be the Hydro Electric of Ontario, whose example Quebec is also following in Hydro-Electric installations. The Province of Ontario, in which Northern Ontario is entirely located, should consider in view of our future energy requirements, and the fact that natural gas use will go up 18 times as figured by experts, take over Northern Ontario Natural Gas, which is now dealing with some 36 municipalities



and industries at fair arbitration figures and operate it for the benefit of all the people of Ontario and Canada.

As the Government can do no harm and as they have the power to do so even refuse fiats, should they not, by legislation make the stock the public bought (1 share plus 1 debenture at \$20.00) rank as a "preferred stock" so far as dividends are concerned, rather than equality of future dividends with the 1¢ and 12¢ stock the directors and shareholders have voted to themselves. That is a very important policy and should be carried out.

To the Borden Commission doing as I know they are doing a real job and seeking national knowledge of the energy fuels of the future, Kipling's lines may apply to certain gas operations: "Something hidden, go and find it."

I do not favour for a moment during construction especially, the Government taking over Trans-Canada pipe line, for while I am a private ownership man yet there is such a thing as unwisely stepping into a bear trap.



WHY NOT MORE CANADIAN CONTRACTORS ON TRANS-CANADA. Between Winnipeg and North Bay Trans-Canada contracts for construction have already been let. What I don't like is that instead of doing what we always did on C.P.R. and C.N.R. on Hydro and other projects, let the contracts for Right of Way clearing and subsequently for Rock Cut to Canadians rather than all to American Contractors while we have so many wonderful Canadian Contractors available. The policy of letting many miles of Right of Way go to American or American controlled companies who have machinery "spreads" for laying pipeline across the clay belt in particular, each spread costing upwards of \$2,000,000, is unfair to Canadian contractors who then have to take a subcontract of right of way clearing and rock cut work. Canada is just starting her Gas and Oil industry, possibly 10% - 15% developed. It is impossible, if not even unwise, to buy costly machinery and equipment for a small short line contract, but as we have many Canadian contractors of ability a few of these did get small contracts on Trans-Canada Pipe Lines. Firms, who have good contracts like Canadian Bechtel and Mannix, American controlled, who have "spreads" and do exceptional work, can be relied on in constructing their difficult sections of muskeg and rock across Northern Ontario. As a railway man of experience I know that this pipeline over hundreds of miles of country is going to be no stronger than



its weakest link if improperly built. Weak links could tie up industrial customers and plants in the East, especially industries who are doing smelting and refining like Copper Cliff where the matte would then freeze onto the reverberatory furnaces unless when the line does break, they switch to oil fuel reserve when necessary.

Only in part am I criticising President Coates and I am not criticising his ability. Whoever is managing companies like Trans-Canada and Northern Ontario Natural Gas, for the latter Company will build the hundred miles from North Bay to Sudbury, should either give our Canadian contractors first chance to get into the biggest natural resource pipeline development (oil and gas) ahead of us in Canada, or this Northern Ontario Natural Gas Company should be a public utility because of its contracts with 36 Northern municipalities and their industries. It is bad enough to have our gas and oil companies American controlled, yet that does not affect companies of a high business standard in Canada such as Imperial Oil whose perseverance of McQueens exploration policy found Leduc and Redwater and others, nor has it affected many other large American Controlled mining companies. The fact cannot be denied, however, by anyone, that we want to move in the direction of contracts and work and ownership, where Canadians are going to have some chance in the making and building of pipelines, probably here through



a "utility" company not unlike Ontario's Hydro or Quebec's Hydro Electric.

EXTRACT FROM PROSPECTUS FILED BY NORTHERN ONTARIO NATURAL GAS. Messrs. Farris and Clark, the President and Vice-President respectively of the Northern Ontario Natural Gas Company, were largely instrumental in founding and organizing the Company and have been active in its affairs since its organization. The prospectus states there were no promoters of the Company except in so far as Messrs. Farris and Clark, Newell and McLean and Charter Oil Company Limited, referred to above, may be deemed to be promoters within the meaning of that term as used in the United States Securities Act of 1933 and rules and regulations of the Securities and Exchange Commission thereunder.

That part of the Prospectus which was debated in the Ontario legislature is given here so that what has been referred to would be made available to the Commission and the Public.

"The number of Common Shares purchased from the Company and the average purchase price thereof (giving effect to the above-mentioned subdivisions of Common Shares) and the number of Common Shares presently held by them are as follows: Mr. Farris, 37,500 shares purchased at an average price of .008 cents per share, of which he now owns 17,500 shares; Mr. Clark, 56,049 shares purchased at an average price



of 12 cents per share, of which he now owns 30,000 shares; Mr. Newell, 32,084 shares purchased at an average price of 31 cents per share, of which he now owns 5,000 shares; Mr. McLean, 105,750 shares purchased at an average price of .05 cents per share, of which he now owns 60,213 shares; and Charter Oil Company Limited, 83,989 shares purchased at an average price of 39 cents per share, all of which it now owns."

The author of this brief did not partake in any of what was known as the "cheap stock", some as low as .000 cents per share, and which has since sold as high as \$10.00 per share and over. Nor did I vote either on the matter of qualification by the Ontario Securities Commission, nor for clearance to have it adopted by the Securities Commission at Washington. The sale to the Public by the Brokers of one debenture and one share of stock being at \$20.00 per share the share was of course, the speculative value which raised the price of the sale under the prospectus, up to \$20.00 per share. When I would not resign under the circumstances, I told the President to discharge me as a Director which he did after telling me that I was always working for Canada and the North Country -- instead of for "us" -- I thought "us" were taking care of themselves in taking down cheap stock from the Treasury as low as .000 cents per share.



These people now possibly have American control I believe, although the stock and debenture issue was partly put out by Canadian Brokers. In this brief I am not accusing anyone of dishonesty, knocking down stock is everyday business -- how cheaply may well be questioned. No one has throughout their lifetime been more favourable to American risk capital coming into Canada than myself, but the game should be played square and men who are makers of Canada definitely should not be discharged and told that they were working for Canada and the North Country and not for "us". This question of American control is dealt with later because I know and appreciate what Texas money meant in the building up of the oil and gas industry in Western Canada. Whether Charlie Coates, President of Trans-Canada and now a Canadian Citizen, who is so exceptionally capable has American leanings does not worry me because again I say that this pipeline serving Eastern industries is no stronger than its weakest link up North and it is experienced pipeline construction men I want to see on the job in the toughest sections. We have them.

ANALYZING MONTREAL OIL MARKETS. Any endeavour to move Alberta Oil into Montreal area will meet with terrific opposition from present refineries there; from Venezuela Government and the carriers moving oil from Venezuela especially, as well as from



some oil coming as formerly, through Suez and what is known as the Middle East, to say nothing of Texas oil and the oil movement through Portland, Maine. The new huge deep draft tankers of 35,000 tons displacement bringing oil from the Middle East, Kuwait and Saudia Arabia, the cheapest oil production in the world, will have to lighten for reaching Montreal through the Lower St. Lawrence, the smaller tankers moving Iraq and Iran crude oil through the Suez to Montreal, which movement was temporarily stopped by Nasser, could get through to Montreal, but are unlikely to ever think of using our new St. Lawrence Waterway due to size displacement.

The big new tankers are, of course, neither using the Suez nor the Panama and are out in the open high seas, and their menace to Western California production and Western Canada oil movement to U.S. planned to sell into the territory from Seattle southward, will meet price competition from the cutting and slashing of tanker rates, which is something these big tankers really know how to do. Against our Canadian oil getting into California comes



also the necessity for our easing oil taxation at Ottawa and as well, present insufficient "oil depletion allowance" as compared to our mining depletion allowances and no Dominion mining taxation herefor 3-1/2 years of minerals. Our income taxation formula favours outside risk funds, but will Canadians ever take risk chances in any volume.

SUBVENTION CO-OPERATION. Provided that satisfactory arrangements can be arrived at by Ottawa with the Montreal refineries, which is the market at Montreal and if other frustrations could be adjusted, a new oil pipeline from the Prairies to the Seaway at the Head of the Lake, could merit consideration in the not so distant future because, after all, even if it does cost us some "subvention money" we have got to have a "Canada first" outlook for all our oil production in the West. Our natural gas output, will be into Montreal by Fall of 1958. Re subventions, recollect how we all once worked so hard on aiding Nickel by bonus and then iron at 1 cent and 2 cents per unit in the years past to sensibly develop our metal resources, which we achieved. Let us also recollect especially the Maritimes, how the "Bridge Subsidy" as it was called which eliminated 551 miles across Northern Ontario North of Lake Superior from being taken into through freight rate calculations on that non-revenue bearing section North of Lake Superior.

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Oil tankers plying between the Head of the Lakes and Montreal, then using the 27' Welland, now being deepened matching new seaway depth, could conceivably market oil from the Head of the Lakes to Montreal aided by "subvention". There are those of us who would like to stay on Canadian soil with these oil pipelines, as we are doing with the gas pipeline, and try to avoid going through foreign country like the "Provincial" oil line now does en-route from our West to Sarnia. We would, when our new seaway is operating, want to see the oil line run along the main Trans-Continental railway from Winnipeg Eastward and then down from Sioux Look-out to the Head of the Lakes, rather than through United States territory to Sarnia. This oil line would then serve a new area that has nickel as well as iron and other ore, along the Trans-Continental Railway, already partly developed. It is a part of Canada where one can be optimistic of the "Sales potential" being built up for oil fuel energy like the gas line has through Northern Ontario to North Bay.

We can well put the loss at 50 cents a barrel at the well head alone compared with added transport cost from elsewhere to Montreal. While we are not yet producing all our own oil requirements in Canada, we soon will, and let us not forget that in the last 10 years our oil output has climbed 45



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times and has been so successful during 1956-57 that the industry found 4.4 million barrels of oil which compared with a figure of 1.5 million barrels each per well discovery during last year in the United States. Food for optimism, but our speed necessitates markets.

ROLLING BACK THE FRONTIER: This gas pipeline location widens Canada's thin red industrial line for the future by 150 miles and now the author of this brief would like to help "Roll back the Frontier" again through oil energy for another long mileage and once more, as on C.N.R. and C.P.R., widen the thin red line across Canada. Probably there will be enough men of vision with their feet on the ground, as our Premier has, in the coming Government to achieve this Nation building - all depends whether they are makers of Canada or not, but "Canada first" should be the objective of the Government and this Borden Commission.

The Chase Manhattan Bank, in a recent survey, puts the importation of our oil into the United States by 1966 at 420,000 barrels a day, from the Western Prairies; and the movement on to the East will be approximately a quarter of that total. It is a high estimate. Out West we may be in a slump due to our pro-rata oil allowable, but let us not forget that Texas is on an allowable of only eight days out of 31 days at present March 29th,



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1958.

WASHINGTON TARIFF ANNOUNCEMENTS:

Washington, March 27 - New oil import restrictions announced today by President Eisenhower, at the height of the Canadian general election campaign, will force firms that bring Canadian oil into the United States East of the Rockies to cut their operations by 6,100 barrels a day on April 1, and by a further 3,800 barrels a day before Sept. 1.

The firms affected are Bay Refinery, Great Northern, International Refining, Lake Superior Refining and Northwestern Oil. These are the companies that have been importing from Canada the major part of the oil they use. Two other importers, the Dow Chemical Corp., and the Lakehead Pipeline Co., are not affected by the reductions because their existing quotas being small - only 300 barrels a day each - has been left untouched.

The total cut of 9,900 barrels a day by September represents about 15 per cent of the 66,400 barrels the five firms are now allowed to import each day. But according to U.S. officials the April 1 cut of 6,100 barrels a day will not cause an actual reduction in imports because already five importers are buying approximately 6,000 barrels a day less than they are allowed to under their existing quota. It is the second cut of 3,800 by Sept. 1, which represents the real reduction.



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This second cut is to enable new U.S. importers to enter the field. It will benefit distant foreign countries and hit neighbouring Canada hard as increased.

THE PREMIER'S NORTHERN DEVELOPMENT POLICY
MUST HAVE FREER PRIVATE MONEY GOING HAND IN HAND:

Since the previous pages were dictated the people of Canada have spoken in no uncertain tone, largely due to the wonderful man who is our Premier. His thought of building a greater Northern Canada is beyond any doubt the right one. I think he could achieve it easier if he were to very definitely loosen up tight money at Ottawa, which I presume is along with old age pensions, what the people of Canada themselves thought. Let us draw a parallel; the author feels that 50% of the risk money that came into Canada during the last year especially from sections of which Texas is an example, went into oil and gas development in Western Canada. Another 30% must, from my close association with mining, have gone into mining developments across Canada with probably 10% going to increase U.S.A. bond investments in Canada, the latter not being classed as risk capital. True there is more money on our neighbours side of the line, but their individual banks do help in building up their own home sections through loans, while here that cannot be said with the tight money policy and the bank



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loans at the present time. The fact is that the outstanding men who are Presidents of our banking system are holding loans very tightly and yet, let me say it softly, increasing their own dividends at the same time. The worm in our apple we all hate to bite into, is our Bank of Canada, and when Canada took over the other 50% of the Bank of Canada ownership from the banks, we unquestionably lost that business balance which the outstanding banking Presidents possessed and the present Bank of Canada from the Governor down, quite evidently lacks. Chapter 42, Section 6 of the Bank Act 1938 and Section 10, Clauses 1, 2(a)(b) and (c) and 3 could well be amended. Let he who thinketh he standeth take heed lest he fall. This not only applies to autocratic dictators recently, but to others also.

The present Board of Directors is as follows:- J.E. Coyne, Governor; J.R. Beattie, Deputy Governor; W. D. Black (Member of the Executive Committee) Waterdown, Ont.; J.M. Buchanan, Vancouver, B.C.; E.G. Burton, C.B.E., Toronto, Ont.; J.L. Cavanagh, New Glasgow, N.S.; N.A. Hesler, Sackville, N.B.; W.A. Johnston, C.C., Winnipeg, Man.; R. H. Milliken, C.C., Regina, Sask.; H.O. Patriquin, Edmonton, Alta.; A.C. Picard, Quebec, Que.; H.A. Russell, St. John's; Anselme Samoisette, O.B.E., Montreal, Que.; Austin A. Scales, Freetown, P.E.I.;



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Ex-Officio - K.W. Taylor, C.B.E. Deputy Minister
of Finance, Ottawa.

We well know that Governor Coyne did not make the other appointments to the Board, that has been done by successive Governments, but when members of his Board sell merchandise in department store quantities across Canada, seemingly without a penny down, which is surely inflation, yet probably not wrong, why does Mr. Coyne shout inflation far and wide? Methinks he should re-read Macbeth in Shakespear "Thou doth protest too much". Has is not a parallel in the "Good Book" where one reads "The voice is the voice of Jacob, but the hand is the hand of Esau".

GOLD'S RECORD IN DEPRESSIONS BUILDING THE
NORTH: When one reviews our progress and knows how gold pulled us out of our biggest depression he cannot approve of the Mint paying less for gold today than it is rated at in other countries. Our gold industry is depressed with mines repeatedly closing and would be entirely out of business were it not for the Emergency Gold Assistance Act for which some of us worked so hard. We are hit or are going to be hit by tariffs on almost all other metals other than gold, but speculative money going into gold could again help the wise project of developing Northern Canada. One can buy new British sovereigns. Why do we not again let gold jingle in everyones pockets



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and finance favourable developments through selling \$100 stamped gold bars and creating within our country something worthwhile. Make no mistake about it we have to ease speculative money because anyone who thinks that Canada can progress without Stock Exchanges when everybody is asking "how is the market today" then they need the experience that the rest of us certainly have. Canada cannot live without bundles of risk capital yearly and there is no use thinking that we can "control" U.S. companies as now suggested, after share and bond issues. It is natural resources development that is going to create the Home market for Gas, Oil and Metals, incidentally creating vast airplane and rail haul business throughout the North.

Money expended in Northern roads construction, and some of us know where, one half of which Government money is going into wages, will immediately be in circulation again after every payroll. Energy study which this Borden Commission will perform is another wise move and should be aided as is now being done by Canada in aiding the development of water powers as in New Brunswick. The present Premier has the good wishes of those who may not always have been thinking along the same lines. The development of our North Land is looking towards building up tonnage traffic of our seaway to the Head of the Lakes, another huge project of which



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Canada can well be proud. When one thinks through our best methods of progress one becomes optimistic of the programme as it is proposed by the Premier and which is going to receive whole-hearted co-operation from so many of us provided he brings the Bank of Canada in line with sensible Resources development proposed. Meantime if this Borden energy report is not too long delayed it is going to be a very helpful constructive move.

Canada - our Canada - developed by a capable, virile and happy Christian people, down through successive Governments, is today admired by other Nations and is yearly achieving the standing which our statesmen, irrespective of politics, with our God given Natural Resources, entitles her to among the Nations of the World.

This is a brief that I know you have spent a great deal of time in preparing, and it is much appreciated by the Commission, and it indicates to all of us who have heard it your great faith in our country and the great Canadianism that lies in your head and your chest. We appreciate it very much, sir, I think that probably more than any other living man in our country you have participated in rolling back the frontiers, and you know what you are speaking of in this brief. We appreciate your obliging us by coming this afternoon rather than on Friday. Thank you very much indeed.

MR. YOUNG: I thank you for the opportunity, sir.

THE CHAIRMAN: Mr. Pattillo?

MR. PATTILLO: That is as much as we were proposing to do today, Mr. Chairman. Tomorrow we will be hearing from British Petroleum and from the Bechtel Corporation. I suggest we adjourn now until tomorrow morning.

THE CHAIRMAN: The Commission will now adjourn and will resume its hearings tomorrow morning at ten o'clock.

--- Whereupon the hearing adjourned at 3.56 p.m., to be resumed, in Toronto, Ontario, at 10.00 a.m., Thursday, July 10, 1958.

ROYAL COMMISSION

ON

ENERGY

HEARINGS

HELD AT

TORONTO

ONT.

VOLUME No.:

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ROYAL COMMISSION

ON

ENERGY

Hearings held at Toronto,
commencing Wednesday,
July 2, 1958, at 10:00 a.m.

PRESENT:

| | |
|-----------------------------|----------|
| Mr. H. Borden, C.M.G., Q.C. | Chairman |
| Mr. J.L. Levesque | Member |
| Mr. G.E. Britnell | Member |
| Dr. R.D. Howland | Member |
| Mr. L.J. Ladner, Q.C. | Member |
| Dr. R.M. Hardy | Member |

COMMISSION COUNSEL:

Mr. A.S. Pattillo, Q.C.
Mr. Miles H. Patterson

| | |
|--------------------|--|
| Mr. J.F. Parkinson | Secretary to the Commission |
| Major N. Lafrance | Assistant Secretary to the Commission |



Thursday,
July 10, 1958

---On resuming at 10:00 a.m.

Submission of
BP CANADA LIMITED

APPEARANCES:

Mr. A.F. Down - President

Mr. T.G. McIntock - Director, Vice-President
and General Manager

THE CHAIRMAN: Gentlemen, the Commission
will now resume its hearing. Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman. We
are going to hear first this morning from BP Canada
Limited which has filed a brief with the Commission
and which I am proposing to be marked as T-10-1.

Mr. Down is here on behalf of the company and
he will introduce those who are associated with him.

---EXHIBIT NO. T-10-1: Submission of BP CANADA LIMITED.

THE CHAIRMAN: Mr. Down?

MR. DOWN: Mr. Chairman and Members of the
Commission, I am Mr. A.F. Down and, as President of BP
Canada, I wish to thank you for your invitation to
appear before you today.

I have with me Mr. T.G. McIntock, who is
a Director and the Vice-President and General Manager
of the Company.

Our submission, which has been prepared for
the main part by the British Petroleum Company
of London, deals with the long term world oil
picture and I would like to take this opportunity



of acknowledging gratefully the major contribution that our parent company has made to this submission. When I have read the submission, if it meets with your approval I would like to outline briefly our corporate setup in Canada and we will then be ready to give any further information regarding our activities that you may request.

THE LONG TERM PROSPECT FOR OIL.

PART I THE WORLD (Excluding the U.S.S.R., Eastern Europe and China.).

THE PAST. Oil and energy:

Before looking at the future prospect for oil it is necessary first to consider the relationship between oil and energy. The most significant aspect of the development of the supply of world energy from this point of view is that oil has grown at a faster rate than total energy. The main reasons for this are:-

(a) The rapid development of the internal combustion engine which has revolutionised the means of transport. Oil products are the most convenient fuels for these engines.

(b) In many process heating applications oil is more efficient than other fuels and for general heating or steam raising is cleaner and easier to handle than coal. In a number of industrial, commercial, and domestic heating applications, where cheap natural gas has not been available, oil has



become the preferred fuel.

(c) In some areas, especially in Europe, coal, the major indigenous fuel, has, for most of the post-war period, been in short supply. The coal shortage has accelerated the pace of the switch-over to the use of oil especially where there are clear advantages in doing so; in some cases the coal shortage has led to the use of fuel oil as a straight substitute for coal.

Table I illustrates the trend of consumption of total energy and oil since 1920 and shows the extent to which the growth in oil consumption has been more rapid than the growth in total energy demand.

TABLE I
RATES OF GROWTH IN ENERGY CONSUMPTION, 1920-1957

| | Total Energy | Oil |
|--------------|--------------|----------|
| U.S.A. . . . | +2% p.a. | +5% p.a. |
| Canada . . . | +3% p.a. | +9% p.a. |
| Europe . . . | +2% p.a. | +8% p.a. |
| World . . . | +2% p.a. | +5% p.a. |

A further illustration is given in the diagram, "World Energy Demand 1929-1957," which also shows the contribution made by the normal commercial fuels in supplying the world's energy. The demand for coal has been fairly static over the period. Hydro-electric output has progressed at a steady rate. Natural gas and oil consumption have both expanded at a rapid rate; between them



they met half of the free world's energy needs in 1957. The increase in natural gas consumption has to some extent been at the expense of oil. This has been especially so in the heating market in the U.S.A.

Oil Supply and Demand: While oil is found in an increasing number of countries, the major part of world oil supply has always been produced in a small number of areas, although the relative importance of individual areas has changed. This is illustrated in the diagram, "World Oil Production by Main Areas," which shows that in total nearly 90% of the free world supply in 1957 was produced in the U.S.A., the Caribbean (mainly Venezuela) and the Middle East countries.

The main production of the Middle East comes from Kuwait, Saudi Arabia, Iran and Iraq. The relative production from these and from all other producing countries is shown on the map. Data on world production are given in Appendix A. Canada ranked 6th in the list of oil-producing countries in 1957 (7th if allowance is made for the reduced production from Iraq due to the closure of the Iraq Petroleum Company's pipelines in the first few months of the year).

In any area, the demand for energy, and so for oil, is closely related to national income and hence the major consuming areas are in the more developed countries of North America, Europe,



South America, South Africa and Australasia. In North America the greatest demand is in the industrial north-eastern area.

All the major consuming areas of the free world are net importers of oil and most of their supplies have to be carried over great distances. On a world average, oil has to move some 3,000 miles to its market (coal on the average moves only 250 miles). Local supplies of oil in consuming areas have therefore a considerable transport advantage over the major sources of oil supply, and can be competitive with these sources even when found in relatively small quantities.

The United States, the world's largest producer and consumer of oil and for a long time the main source of supply for the rest of the world, is today the largest importer of oil. Net imports in 1957 were 12 1/2% of U.S. domestic oil demand and 5 1/2% of total energy demand.

The Eastern Hemisphere has for most of this century been a net importer of oil from the Western Hemisphere; but since the war oil from both the Middle East and the East Indies has been shipped in increasing quantities to North and South America and the net movement from West to East has been declining.

A significant development in the post-war pattern of supply and demand has been the rapid



growth of the Middle East into the position of being the major exporter of oil to destinations mainly within the Eastern Hemisphere. This is shown in the diagram, "World Oil Exports by Origin."

THE FUTURE. Energy demand:

The future of oil demand depends on two main factors -- the total demand for energy and the availability and competitiveness of other energy sources.

In the developed industrial countries of North America and Western Europe it is reasonable to assume that there will be a continuation of the increase in living standards. In the developing countries economic activity is expected to increase more rapidly provided capital is made available and world trade can be maintained at a reasonably high level; the assumption of continued growth in the more developed countries implies these conditions.

Our analysis of the trends of economic development throughout the world suggests that energy consumption may grow between now and 1980 by an average of 3% p.a. This assumes no serious economic depressions or major wars.

There should be no shortage of energy supply during this period. There are ample reserves of all the fossil fuels and some demand will be met by nuclear power. One possible pattern of energy supply to meet future demand is illustrated in the diagram, "World Energy Demand 1957 and Estimate for



1965 and 1980." For this pattern the following assumptions have been made on the development of the various forms of energy:

1. There will be a significant increase in coal production in the U.S.A. and a slow increase elsewhere.
2. Natural gas production will more than double in North America and in the rest of the free world will increase more than four times.
3. Hydro-electricity output will increase fairly rapidly at first but over the whole period the rate will not be more than 2% p.a.
4. In Europe 11% and in the rest of the world excluding North America 7% of total energy will be met by nuclear power. This is based upon development in those areas where the supply of coal and natural gas is not expected to increase in line with the demand for electricity. It takes full account of published programmes and allows for a substantial development where programmes have not yet been announced. No major use of nuclear power is anticipated in the U.S.A. where there are abundant reserves of coal which can easily be produced. On the other hand, should nuclear power be developed in the U.S.A., it will probably replace coal or natural gas, rather than oil, for electricity generation.
5. Production of oil is the amount estimated to be required



- (a) to meet the probable rate of growth in transport and other energy requirements most efficiently met by oil;
- (b) to supply those areas for which oil is the cheapest source of energy;
- (c) to meet, in addition to (a), part of the import requirements of those areas where there may be a shortage of indigenous energy supplies after allowing for the reasonable development of nuclear power;
- (d) to provide the many non-energy petroleum products including petroleum chemical feedstock which is expected to increase at a rapid rate.

Oil demand: On these assumptions the demand for oil will increase at $4\frac{1}{4}\%$ p.a. -- a faster rate than the demand for total energy, thus following the historical trend. By 1980 the share of world primary energy production held by oil will have risen to 49% compared with 38% in 1957. The share of demand met by oil twenty years ago was 20%.

Table 2 gives, in very broad terms, the regional distribution of estimated oil demand in 1980 compared with 1957; the intermediate position in 1965 is also shown.



Table 2

WORLD OIL DEMAND (excluding U.S.S.R., etc.)

| | Thousand Barrels Per Day (Crude oil equivalent) | | | Percentage per annum increase 1957-1980 |
|--------------------------|--|----------------------|----------------------|--|
| | 1957 | 1965 | 1980 | |
| U.S.A. | 8,800 | 11,400 | 17,500 | + 3% p.a. |
| Canada | 740 | 1,200 | 1,800 | + 4% p.a. |
| Other Western Hemisphere | <u>1,580</u> | <u>2,800</u> | <u>4,100</u> | <u>+ 4 1/4% p.a.</u> |
| Total Western Hemisphere | <u>11,120</u> | <u>15,400</u> | <u>23,400</u> | <u>+ 3 1/4% p.a.</u> |
| Europe | <u>2,790</u> | <u>5,300</u> | <u>9,800</u> | <u>+ 5 1/2% p.a.</u> |
| Other Eastern Hemisphere | <u>2,090</u> | <u>3,500</u> | <u>8,000</u> | <u>+ 6% p.a.</u> |
| Total Eastern Hemisphere | <u>4,880</u> | <u>8,800</u> | <u>17,800</u> | <u>+ 5 3/4% p.a.</u> |
| WORLD TOTAL | <u><u>16,000</u></u> | <u><u>24,200</u></u> | <u><u>41,200</u></u> | <u><u>+ 4 1/4% p.a.</u></u> |

An important hypothesis in this forecast is that if a consumer chooses oil to meet his energy needs because it is the best fuel or because other energy sources are in short supply he will be able to do so even if this means an increase in imports of oil. If this choice is restricted in any country by, say, artificial barriers to oil imports the forecast will not be met. At the same time such a restriction will lead either to the choice of a less efficient or more costly fuel and hence an increase in manufacturing costs or to a slowing down in economic development because of a shortage of energy supply or both.

Oil Supply: Taking the world as a whole, the cumulative amount of oil to be produced from 1953-1980 in order to meet an expanding demand, such as is estimated in Table 2, will need to be



some 235,000 million barrels. This compares with 241,000 million barrels estimated to be in proved reserves at the end of 1957. The world production rate in 1980 of 41.2 million b/d should be supported by reserves equal to, say, 12 times the annual output, i.e., the average ratio of reserves to production in the U.S.A. for a number of years. On this basis reserves would need to be 180,000 million barrels. The amount of oil, therefore, to be discovered between now and 1980 to sustain the estimated demand for oil is 174,000 million barrels or 7,500 million barrels per year. This amount compares with the world average over the past five years of 30,000 million barrels per year, the bulk of which is a revaluation of reserves in the Middle East.

1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part we shall consider the case of a single particle.

3. The third part is devoted to the case of a system of particles.

4. In the fourth part we shall consider the case of a continuous medium.

5. The fifth part is devoted to the case of a system of continuous media.

6. In the sixth part we shall consider the case of a system of particles and a continuous medium.

7. The seventh part is devoted to the case of a system of continuous media and a continuous medium.

8. In the eighth part we shall consider the case of a system of particles and a system of continuous media.

9. The ninth part is devoted to the case of a system of continuous media and a system of continuous media.

10. In the tenth part we shall consider the case of a system of particles and a system of continuous media and a continuous medium.

11. The eleventh part is devoted to the case of a system of continuous media and a system of continuous media and a continuous medium.

12. In the twelfth part we shall consider the case of a system of particles and a system of continuous media and a system of continuous media and a continuous medium.

13. The thirteenth part is devoted to the case of a system of continuous media and a system of continuous media and a system of continuous media and a continuous medium.

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Thus in order to meet estimated oil demand throughout the period 1958 to 1980 inclusive, a discovery rate of about a quarter of the annual rate of recent years will be required. If the calculation were based on having 20 times annual production in reserve at the end of the period then 12,500 million barrels would need to be found each year, or less than half the recent historical rate.

Over the past twenty years published proved reserves of the world's oil have been continually increasing - in other words new discoveries have been consistently greater than the quantities of oil extracted - but between the different regions of the world the development has contrasted sharply.

In North America proved reserves have been rising at a much slower rate than in other areas of the world and in fact in 1957 they actually declined. Elsewhere reserves have been increasing more rapidly and this has been particularly so in the Middle East where published proved reserves now represent 70% of the free world total. Data on current published proved reserves are given in Appendix B.

In recent years new discoveries have been made in, for example, Europe, South America and especially in North and West Africa. In North



Africa preliminary assessments suggest that production levels as high as 500,000 b/d might be achieved in a few years time. These discoveries, however, have been dwarfed by the extensions to reserves made in the Middle East and the Caribbean. In 1957 the total published additions to reserves in the Caribbean were five times greater than in the whole of the rest of the Western Hemisphere; and published additions to reserves in the Middle East were four times the total additions in all other areas of the world, including the Caribbean. Whilst there is every reason to expect that many new and important discoveries will be made and that in the more favoured areas the assessed recoverable reserves of proved areas will be further increased as development drilling takes place and recovery techniques are improved, experience suggests that these discoveries will not be evenly spread. Nevertheless, there can be little doubt that the petroleum industry as a whole will be able to meet world oil demand as forecast up to 1980 and for many years beyond.

Table 3 sets out the possible share of world oil demand which will be met by the Western and Eastern Hemispheres in 1965 and 1980 compared with 1957.



Table 3

POSSIBLE PATTERN OF WORLD OIL PRODUCTION

 Including natural gas liquids
 and shale oil

Thousand Barrels Per Day

| | 1957 | 1965 | 1980 |
|-------------------------|----------------|---------------|---------------|
| Western Hemisphere..... | 11,930 | 15,300 | 20,900 |
| Eastern Hemisphere..... | <u>4,290</u> | <u>8,900</u> | <u>20,300</u> |
| | <u>16,220*</u> | <u>24,200</u> | <u>41,200</u> |

* The difference between the total demand in Table 2 for 1957 and total production in Table 3 is accounted for by stockbuild and imports from the U.S.S.R., etc.

The position of the U.S.A. in the world picture is of major importance. Demand in 1980 will possibly be $17\frac{1}{2}$ million b/d - double the present rate. Recent discovery rates and development of reserves in the U.S.A. do not provide any grounds for changing the view that production of crude oil will level off and probably decline sometime before 1970. With growing demand, and the prospect of declining output, increasing attention is likely to be devoted to the development of the production of oil from shale. Allowing for this and the recovery of liquid fuels from natural gas, the total oil availability in the U.S.A. may be some $11\frac{1}{2}$ million b/d in 1980, or 6 million b/d less than forecast demand. Thus

by 1980 net oil imports in the U.S.A. may be meeting 35% of total demand. In order to see this in perspective it should be noted that these imports will represent only 15% of total U.S.A. energy demand as illustrated in the diagram, "U.S.A. Energy Demand - 1957 and Estimates for 1965 and 1980."

PART II - CANADA, OIL SUPPLY AND DEMAND: There has been a large increase in Canadian oil production in the past decade. But the discovery of oil so far, as a result of an intensive exploratory effort, whilst of tremendous importance, is not yet such as to justify the assumption that Canadian oil has long term prospects beyond its natural market. The natural economic market for Canadian crude oil can be regarded as extending from eastern Ontario to the west coast, and including North Western and North Central states of the U.S.A.

In the long term there is clearly a large potential market for Canadian crude oil. Unless there is a dramatic development of shale oil production the U.S.A. will become a far greater net importer of oil than she is to-day and as indicated in Part I imports could well be of the order of 6 million b/d by 1980. John Davis in his study of Canadian Energy Prospects, prepared in 1957 for the Royal Commission on Canada's Economic Prospects, gave a possible export market of 1.6



million b/d by 1980. Such a market added to Canadian demand from eastern Ontario to Vancouver would give a total market as high as 2.8 million b/d by 1980.

The development of Canadian crude oil to meet this total market would involve a finding rate of 800 million barrels per year. The calculation of this is as shown in Table 4.

Table 4

| | |
|--|-------------------------------|
| Cumulative crude oil production 1958 to 1980 rising from 500,000 b/d to 2,500,000 b/d (i.e. allowing 10% of demand met by natural gasoline). | 10,500 million barrels |
| Reserves 1st January, 1958.... | <u>2,875</u> million barrels |
| New reserves required to meet production..... | 7,625 million barrels |
| Reserves required at end 1980 assuming a ratio of reserves to production of 12:1 | <u>10,950</u> million barrels |
| Total new reserves to be found..... | <u>18,575</u> million barrels |
| Average finding rate per year 1958-1980..... | <u>800</u> million barrels |

This compares with a finding rate since the discovery of Leduc of 400 million barrels per year. Although exploratory activity has been intensive throughout this period, the data do not allow easy extrapolation into the future. Nevertheless the record of the past ten years would scarcely support the assumption of a finding rate of 800 million



barrels per year over the next 23 years and it seems unlikely therefore that Canadian oil will, in the long term, be able to satisfy the whole of its natural market as defined above.

To put the situation into perspective, if the present average finding rate were merely to be maintained, but production were to increase from the 1957 rate of $6\frac{1}{2}\%$ to approximately $8\frac{1}{2}\%$ of proved reserves, then Canada would not only be unable to take advantage of export markets but would have to be an importer of oil in the past.

It follows, therefore, that if Canada is, on balance, to be self-sufficient in oil then there must be a marked increase in the finding rate achieved since the discovery of Leduc.

To maintain a finding rate of 400 million barrels per year will require an exploratory effort even greater than that of the past ten years because exploration will be extended to the more remote areas of the North West and, as time goes on, the average discovery per exploratory well will probably tend to decline. To increase the finding rate will call for a much greater effort.

We do not wish the foregoing to be taken to imply that the optimistic estimates made by some others of future discovery rates are impossible of attainment; but we do suggest that most careful note should be taken of the immense financial effort



involved when considering the future of the Canadian oil industry as a whole. Decisions based on an assumed rate of development substantially greater than anything which has in fact been achieved in the recent past despite intensive exploratory effort should be very carefully weighed.

The probable long term picture of Canadian oil is, at the present time, temporarily obscured by the general world excess of crude oil production facilities and of tanker carrying capacity. This easy supply situation is partly the result of a pause in the rate of increase in demand especially in Europe, Canada and the U.S.A. This has led to restrictions being imposed on imports of crude oil into the U.S.A. Some levelling off in the rate of growth in domestic oil demand, together with the temporary slowing down in the expansion of the export markets, has caused the present decline in the rate of production of Canadian crude.

One solution to the short term difficulties facing the Canadian producer that has been suggested is the capture of the Montreal market. If, in the long term, all Canadian crude oil production can be absorbed in its geographic market, then a pipeline to Montreal to capture the market will involve the diversion of limited oil reserves and capital resources to supply a relatively uneconomic area.

One of the best prospects for an early



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solution to the present problem of the restricted earning capacity of the Canadian petroleum industry lies in the speedy development of the readily available export markets for the natural gas which is being found in great abundance in the search for oil. It is considered by many that Canadian natural gas supply is, unlike that of crude oil, likely to exceed substantially the foreseeable domestic demand and its unrestricted commercial exploitation would be of considerable benefit to the Canadian economy as well as to the petroleum producing industry in Canada.



There can be no certainty that any forecast made today will prove even approximately true. The basic assumption in this submission is that, in the medium and longer term, there will be a ready nearby market in Western Canada and in the North West and North Central United States for all probable Western Canadian crude oil production. This may prove wrong by an error or combination of errors in the three principal factors involved in the forecast. Canadian demand may be estimated at too high a level; the rate of discovery may prove greater than has been assumed as a reasonable expectation or, again, contrary to what has been assumed, U. S. markets for imports may continue to be restricted. In the unlikely event of all these possible errors having been made and an over-supply position persists in Canadian crude for a number of years, special measures to deal with the situation may become necessary. But it would be unfortunate if, to meet what appears more likely to be a purely short term situation, the economic pattern of the Canadian oil industry were to be permanently distorted to the longer term detriment of producer and consumer alike.

The BP Group's Entry into Canada:

The BP Group in extending its activities to Canada wishes to share and assist in the fulfilment of the prospects which Canada's future offers



and intends to build up a fully integrated Canadian enterprise.

As a first step an interest in production and exploration in Western Canada was obtained by an arrangement with Triad Oil Co. Ltd. whereby the Group will acquire by the end of 1958 approximately a 50 per cent interest in that company, the balance of the shares being held by the public. This was followed by the establishment of a marketing organization in Eastern Canada. As a third step the construction of a refinery near Montreal is in hand. It is thought that this will continue to be an area of rapidly growing consumption, which, in the belief that under normal conditions Canadian production will find an outlet within its natural market, can be supplied competitively from overseas.

As a sterling company, BP by importing crude oil from its overseas resources into Canada will assist in improving the Sterling Area's trading position with the dollar area and more specifically with Canada.

If I could make a comment, both Appendix A and B include the USSR, Eastern Europe and China, and the figure which appears on page 12 of 241 million barrels is, in fact, different on the agenda; and, at the same time, the total figure in the world oil production is merely crude



oil.

May I read a short note, Mr. Chairman?

THE CHAIRMAN: Yes, certainly.

MR. DOWN: The British Petroleum Company Limited (of Britannic House, Finsbury Circus, London, England) has, at the present time, two Canadian subsidiaries -- BP Exploration (Canada) Limited, a Dominion of Canada private company incorporated on 7th February 1955, and BP Canada Limited, a Dominion of Canada private company incorporated on 15th June 1955. The former company is a wholly owned subsidiary of BP Exploration Limited, a United Kingdom company, which is, in turn, a wholly owned subsidiary of The British Petroleum Company Limited. The second company, BP Canada Limited, is a wholly owned subsidiary of The British Petroleum Company Limited, England.

The exploration subsidiary, BP Exploration (Canada) Limited, is the company through which our interests in Western Canada are held and this company owns the bulk of our holdings in Triad Oil Co. Ltd., an Albertan company registered in Calgary. Certain of the shares of this company are held by BP Exploration, London, but the total holding in the Group is at present 43.8 per cent and will increase to approximately 51 per cent at the end of 1958, by which time the total contribution to the Treasury of Triad will have been



\$35,320,000. This sum has been or will be used in exploration and development expenditure in Alberta, Saskatchewan, British Columbia and N.W.T.

The second company, BP Canada Limited, is at present our main operating company in Eastern Canada and is engaged in developing a market for petroleum products in Quebec and Eastern and Northern Ontario. The construction of our refinery in Montreal is in hand and will come on stream in mid 1960. The capacity of this refinery is 25,000 barrels per day and it will be supplied by crude purchased from the BP Group.

THE CHAIRMAN: Thank you, Mr. Down.

Yes, Mr. Pattillo?

MR. PATTILLO: Mr. Down, as I understand it, then, so far as the corporate structure of the companies is concerned in Canada, the public has, of course, had the opportunity to acquire shares in Triad?

MR. DOWN: That is correct.

MR. PATTILLO: And so far as the funded debt of any of the companies -- is there such a thing?

MR. DOWN: Yes.

MR. PATTILLO: So far as the directorate of the companies is concerned, are there any Canadians on the Board?



MR. DOWN: On the Board of BP (Canada) there is one Canadian, Mr. Graham Towers, who is the Chairman of the Board. It has five other directors, two of whom are resident in Canada, and the other one is resident in New York; and the other two are resident in London.

BP Exploration (Canada) has two directors resident in Canada, and one is a Canadian and one is not. Of the other two directors one is resident in New York and the other one is resident in London.

MR. PATTILLO: Now, if I might, just for a moment, look at the situation in Western Canada: In the producing operations of your companies -- of Triad -- what is the MPR of the company?

MR. DOWN: I would like to say that these are Triad figures, but they were put before the Commission up in Calgary. Triad's gross allowable for May was 2,593 barrels per month, and the gross was 6,200 barrels.

MR. PATTILLO: Now, has British Petroleum, or any of its affiliates, any refineries in the area which you have described as being the natural marketing area of Canadian crude?

MR. DOWN: No, they have not.

MR. PATTILLO: Have they substantial



share interest in any companies that have a refinery in that area?

MR. DOWN: No.

MR. PATTILLO: Now, may I shift for a moment to the Montreal situation? Your refinery is in the course of construction now; is that right?

MR. DOWN: That is correct.

MR. PATTILLO: And it is contemplated that it will be supplied by crude oil brought in from the Middle East?

MR. DOWN: It will be crude oil from our group, probably predominantly from the Middle East; but we have sources in the Commonwealth, in Nigeria and Trinidad, and it may be some of these.

MR. PATTILLO: But, in any event, it will be your Group's own oil?

MR. DOWN: That is correct.

MR. PATTILLO: Have you any figures -- it may be that you are not in a position to answer these question -- but have you any figures which were worked up in considering the location of your refinery in Montreal as to the projected laid-down cost of crude in Montreal?

MR. DOWN: We have our laid-down cost figure, yes.

MR. PATTILLO: Would you mind giving a copy to the Chairman?



MR. DOWN: Certainly.

MR. PATTILLO: You would be prepared to give a copy to the Chairman?

MR. DOWN: Yes.

MR. PATTILLO: Thank you.

MR. DOWN: I am sorry. I may have answered you rather rapidly. You said "laid-down cost"?

MR. PATTILLO: Yes.

MR. DOWN: Is it cost to BP Canada?

MR. PATTILLO: Yes.

MR. DOWN: I don't want to be under a misapprehension. It is the cost to BP Canada?

MR. PATTILLO: The cost to BP Canada.

MR. DOWN: Yes.

MR. PATTILLO: Well, let us see, then; perhaps I can get at it -- BP Canada will be buying at a posted price?

MR. DOWN: Yes, that is correct.

MR. PATTILLO: What about the transportation? Will that be by BP Canada for its own account?

MR. DOWN: No; that crude will probably be moved in BP tankers and we will be paying the going price.

MR. PATTILLO: Do you contemplate bringing the oil into Portland and taking it to Montreal, or do you contemplate bring it directly to



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7339

Montreal?

MR. DOWN: Probably both.

MR. PATTILLO: Probably both, you say?



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MR. DOWN: Probably both. In other words, we would carry it to Montreal during the summer months, of course.

MR. PATTILLO: Are you going to build any storage facilities in Montreal for the purpose of storing over the winter months?

MR. DOWN: The normal storage capacity would be that required for the refinery operation.

MR. PATTILLO: You do not contemplate any excess storage capacity so that you could bring in during the summer months all of your crude supplies?

MR. DOWN: No, sir.

MR. PATTILLO: Now are you in a position to give to the Chairman not only the laid down cost to B.P. Canada but the laid down cost to the B.P. organization of crude delivered to Montreal?

MR. DOWN: I have no information on the costs, but I will endeavour to obtain for the Chairman some help to the Commission on that subject.

MR. PATTILLO: Thank you. Now, Mr. Down, can you give us any help as to the considerations and factors that were considered by the company in reaching its decision to build the refinery at Montreal rather than elsewhere in Canada?

MR. DOWN: Yes, I will try to explain our position. When we took the decision that we wanted to come to Canada and join in what I might describe as every phase of the oil operations over



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here, our first step was to go to the west and participate in exploration and development. The next step, of course, was the question of marketing and refining, and clearly to our group, as we have set out I think in our general paper, we envisaged that there was an import area in eastern Canada which we could economically supply by imports of oil from that side. We, of course, having sources of oil in the Middle East and elsewhere, it was a logical step for us to set up our first refineries in Canada in Montreal.

MR. PATTILLO: Now, I am not asking you to disclose the exact source, but I am interested in the geographical source of the supplies which you are presently using in Canada for your marketing operations. Are you acquiring the supplies that you need at present for your marketing operations, pending the construction of your refinery, from some Canadian refiner?

MR. DOWN: Yes, we are.

MR. PATTILLO: Are those supplies, do you know, being refined from imported crude or Canadian crude?

MR. DOWN: It is mainly imported crude to Montreal.

MR. PATTILLO: Some acquired from refiners who may be using Canadian crude other than in Montreal?



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MR. DOWN: That is correct.

MR. PATTILLO: Can you give me any idea as to the ratio of the supplies that you are acquiring from the Montreal area as opposed to supplies that you are getting from the Toronto area?

MR. DOWN: We can certainly get that. We have not it readily available but we will get it and have it for you.

MR. PATTILLO: Thank you. Is the company importing into the country any products?

MR. DOWN: Just a very few special lubricating oils. Very few.

MR. PATTILLO: Are they being imported from the United States or from elsewhere?

MR. DOWN: From the United Kingdom -- Britain.

MR. PATTILLO: Is it the company's scheme in the future to endeavour to expand its marketing operations across the whole of Canada or is it going to confine itself to the provinces which it is now in?

MR. DOWN: We propose to go the whole hog, go right across.

MR. PATTILLO: Do you contemplate having some day in the future more than the refinery in Montreal?

MR. DOWN: Yes, sir.

MR. PATTILLO: Is it contemplated in your



studies that you have made that for other refineries you will be using Canadian crude?

MR. DOWN: I will put it this way. We have not really got that far. The answer is certainly a conditional yes. We have not taken the positive steps to work it out. We are busy getting the market for the Montreal refinery.

MR. PATTILLO: What has been your experience in the development of when you are going into a new country? Do you first work on building up a market and then, when you get to a certain development of the market, do you build a refinery to supply? Is that the procedure generally?

MR. DOWN: Yes, generally speaking, our endeavour is to bring the refinery on as soon as we have a market that starts it off at a reasonable economic level.

MR. PATTILLO: Mr. Down, I assume it is almost axiomatic from what you have told us about your present plans that, if Canada did impose, as has the United States, a quota on imports, it would have a very serious effect on your company's plans?

MR. DOWN: Yes, I think it might well.

MR. PATTILLO: Have you made any study as to just what the effect would be?

MR. DOWN: No, we have not. May I put it this way? I do not think our objective



would alter at all, but it might well have an effect on pace - - the pace at which we would develop our plans.

THE CHAIRMAN: Keener competition would not be developed as soon?

MR. DOWN: Check.

MR. PATTILLO: Now, I wonder whether you would be able to ask your parent company if they could assist the Commission by providing data on ocean tanker transportation, if they would give us current rates and the long term expectations of tanker charges, particularly with reference to transportation from the Middle East?

MR. DOWN: Yes, I would be glad to ask them to do that. May I get this clear? You want our parent company's forecast on what they think the future trends of tanker freights will be?

MR. PATTILLO: That is correct - - what the present situation is and what they think is going to develop.

MR. DOWN: May I just make the comment that I think for the future, as a result of the Suez crisis, that the tendency in the future is that people will aim to have rather more tankers than too few, as a sort of insurance, and that may have a relatively downward effect on freight. In other words, since the Suez crisis it has been



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7345

sensible, to put it that way, for major companies to have some sort of cushion in case of cutting of pipe lines or closing of Suez.



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MR. PATTILLO: I gather the whole oil industry operates on such theories, not merely tankers; it is a good thing to have lots of oil that you cannot sell?

MR. DOWN: There are short and long term angles on that point.

MR. PATTILLO: Now, in reading your brief would I be fairly summarizing it if I said that your approach to the idea of moving Canadian crude to Montreal is, this is certainly not the time to do it? It might very well be that what we envisage are the natural markets for Canadian crude will not become available but until one is certain that is not merely a temporary condition but that it is going to continue we think that one should not consider the Montreal market for Canadian crude? However, if it becomes clear that what we think is a temporary condition is a permanent one then we agree that it may be necessary to consider moving Canadian crude to Montreal. Is that really what you are saying?

MR. DOWN: Yes, I think the solution, or the suggested solution, to the temporary problem is so drastic that we think it has to be very, very carefully looked at before the big step is taken.

MR. PATTILLO: Mr. Down, do you know whether any of the oil belonging to the BP Group



is this nasty oil that is sneaking into the Puget Sound area and displacing the Canadian crude?

MR. DOWN: Not to my knowledge but I would certainly have to check. As far as I know the answer is "No", and I am practically certain about that. Put it this way: may I say "No" and if I find on checking the answer is "Yes" I will come back and let you know. I am practically certain the answer is "No".

THE CHAIRMAN: Mr. Frawley?

MR. FRAWLEY: Thank you, Mr. Chairman.

It is not likely that Shell would be buying crude out in Indonesia from BP?

MR. DOWN: I should think it highly improbable.

MR. FRAWLEY: So that if Shell is going to provide Puget Sound with British Borneo crude it will be their own production?

MR. DOWN: I think perhaps you should ask Shell that question.

MR. FRAWLEY: Perhaps so, but it is hardly likely for them to be buying from you?

MR. DOWN: Not likely.

MR. FRAWLEY: And in the case of Texas, the Caltex Corporation have production in Borneo too?

MR. DOWN: Yes, I believe so.

MR. FRAWLEY: Now, there are two major



companies in the U. K., BP and BP Exploration?

MR. DOWN: In Canada?

MR. FRAWLEY: No, in the U.K., the parent companies -- I am speaking of the parent companies. Are there two companies?

MR. DOWN: I am sorry, I misunderstood your question. The main company is the British Petroleum Company; BP Exploration is one hundred per cent subsidiary and is, in fact, the exploring subsidiary of the parent, but they are both U.K. companies.

MR. FRAWLEY: For general purposes it is British Petroleum that operates throughout the world?

MR. DOWN: That is quite right.

MR. FRAWLEY: Now, you have production in the Middle East?

MR. DOWN: Yes.

MR. FRAWLEY: The Far East?

MR. DOWN: Not in the Far East, no.

MR. FRAWLEY: Not in Indonesia?

MR. DOWN: No.

MR. FRAWLEY: Some, you say, in Africa?

MR. DOWN: We have just begun to develop oil in Nigeria.

MR. FRAWLEY: In the Caribbean?

MR. DOWN: No, Trinidad; we have production in Trinidad but not in Venezuela.



MR. FRAWLEY: Where do you have production in the Caribbean?

MR. DOWN: In Trinidad.

MR. FRAWLEY: Now, do you have refineries in the Middle East?

MR. DOWN: Yes, we have.

MR. FRAWLEY: Do you have more production than what goes on stream in your refineries in the Middle East?

MR. DOWN: Yes.

MR. FRAWLEY: What would be, just roughly, the percentage of production to refining in the Middle East, first?

MR. DOWN: I cannot really answer that one. The situation is, with our extensive reserves and if our refinery demand increased it would be probable that we would drill and further develop to bring it up to our requirements.

MR. FRAWLEY: You have a great deal more crude oil on tap, namely reserves, than you refine?

MR. DOWN: That is right.

MR. FRAWLEY: And does the same apply in Trinidad?

MR. DOWN: No, it does not.

MR. FRAWLEY: What is the situation in Trinidad?

MR. DOWN: I am not too familiar with



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7350

it. Broadly speaking, I think -- we are in there in partnership, in the first place -- generally speaking, there are no reserves as far as I know. May I just check? May I put it this way, I will have to find out because I am not in a position to give you accurate information.

MR. FRAWLEY: Did you also say you had no refinery in the Caribbean, just production?

MR. DOWN: We have production in Trinidad.



MR. FRAWLEY: Now, did you already say that you had no refinery in the Carribean, just production?

MR. DOWN: We have production in Trinidad.

MR. FRAWLEY: And you have a refinery in Trinidad?

MR. DOWN: I think that our production there is sold to refineries belonging to other parties. Frankly, I am not too familiar with the actual detailed situation there.

MR. FRAWLEY: From what you have told me so far, Mr. Down, I gather that BP is mainly a Middle East operation.

MR. DOWN: Well, our main sources of crude oil are in the Middle East; we market very extensively in the Middle East area.

MR. FRAWLEY: But you market in the Middle East.

MR. DOWN: Yes.

MR. FRAWLEY: Where is the crude oil going now which will go into Montreal when you go onstream there?

MR. DOWN: It is down the hole.

MR. FRAWLEY: It is locked in at the moment?

MR. DOWN: Yes.

MR. FRAWLEY: So when you told my friend, Mr. Pattillo, that you would be seriously



affected if, through government action, your foreign crude was not allowed to come into Montreal, all it means is that it would remain locked in the ground in the Middle East.

MR. DOWN: I am sorry, I didn't - -

MR. FRAWLEY: It would remain locked in the ground in the Middle East.

MR. DOWN: Yes, generally speaking, I think that is correct.

MR. FRAWLEY: And you would be in no worse position than Imperial Oil; the Creole production would remain in Venezuela or go elsewhere.

MR. DOWN: I think the situation there is certainly not in the same position, if I get the question correctly, in that if crude import is cut off, we, in fact, have fractional production in Western Canada and we are therefore left with an investment in the refinery and virtually no crude of our own to put into it. Does that answer your question?

MR. FRAWLEY: Yes, that is all right, Mr. Down.

Then, coming back again to the relationship between what you are now putting through refineries and your reserves, I suppose it is difficult to give me a percentage. You have vast reserves. "Vast" is not an improper word to use in regard to your supply of crude oil in the Middle East.

MR. DOWN: Perhaps I could answer your



question this way, and I stress it is very general, that BP production related to the world is in the order of 5 per cent production of our reserve holdings and just 20 per cent of the world reserves.

MR. FRAWLEY: I put it to you that you are coming into Canada, putting aside your very commendable exploration work in Alberta and elsewhere in Canada, to find an outlet for your vast reserves of crude oil in the Middle East.

MR. DOWN: I don't think I would put it quite that way. The \$35 million we have put into Western Canada doesn't come from nowhere, and the problem facing all oil today is the generation of capital, and our purpose in world trade is to keep world trade flowing and to keep the expansion of tremendous capital requirements by putting money into Western Canada, and by putting capital into the East it keeps it moving. In other words, we cannot divorce our operations in the West. \$35 million is a large sum of money.

MR. FRAWLEY: But you have made large investments in the Middle East.

MR. DOWN: Yes, that is correct.

MR. FRAWLEY: And, having made those large investments, you have to find a place for this reserve. That is a reasonable statement, isn't it?

MR. DOWN: I will go along with you, yes.



MR. FRAWLEY: And one of the places is turning out to be Montreal; it just naturally follows, doesn't it?

MR. DOWN: I think that a very big distinction can be drawn between our, as it were, skimming the cream, if I can put it that way, by setting up in Montreal and sitting tight and selling Middle East crude and keeping in that orbit. What, in fact, we are doing is working to an integrated enterprise in Canada, and therefore when you say "get rid of", putting it that way, it is part of a much bigger and much more important picture.

MR. FRAWLEY: Why couldn't you have gone into Ontario and built your refinery in Ontario on Western Canadian crude and supplied the Ontario and Quebec markets from your refinery in Ontario?

MR. DOWN: Well, I think I have already partially answered that question, that our share of production through our affiliate, Triad, is fractional, and as a first step our first refinery in Canada clearly, from our point of view, from economics would be to work from Montreal. In other words, we generate capital, if you like, and then go into Ontario and further on.

MR. FRAWLEY: Then you are doing two things, if you have latched onto the suggestion I made, that is you use, the crude in Ontario, you would be developing Canadian resources, but you would not be



marketing your Middle East production.

MR. DOWN: I don't think we can accept on the basis we are working on that if we had built a refinery in Montreal based on Canadian crude we would be getting a Quebec market. We look upon Montreal as an import market, and it would be naturally the first step.

MR. FRAWLEY: It is an import market, and you would just regard it as an import market.

MR. DOWN: An import market which, from our point of view, fitted into a bigger picture in our whole process in Canada, and, if I may put it this way, was a logical step for us.

MR. FRAWLEY: The net result was you put capital into Western Canada and you also found a place for some Middle East crude in Montreal and you call that one single operation, and I will agree with you there, but it was an operation which helped you getting rid of your Middle East production and then found a place for your capital in the oil fields of Western Canada. It did those two things, and you regard those as one single operation.

MR. DOWN: In a very wide sense, yes. They are really logical steps towards a development of longer-term plans.

MR. FRAWLEY: Now, your cost in Montreal, of course, your laid-down cost at your refinery in Montreal, is basically the lifting cost in the Middle



East plus the BP tanker rate to take it to Montreal.

MR. DOWN: You said lifting cost. Our cost is the posted price plus the growing tanker rates.

MR. FRAWLEY: But you are merely an arm of British Petroleum.

MR. DOWN: Yes.

MR. FRAWLEY: And they have the production in the Middle East.

MR. DOWN: Yes.

MR. FRAWLEY: And I say effectively one has to go behind the posted price which your invoice shows, and the real truth of the matter is that the cost to your parent company is the lifting cost, not the posted price but the lifting cost in the Middle East plus your own tanker cost in bringing the oil to Montreal.

MR. DOWN: Not quite, because in addition to the lifting and development cost -- incidentally, while on this business of Middle East cost, it isn't just a matter of lifting in the Middle East; in the Persian Gulf there are very large expenditures by the oil companies, townships, schools, buildings, foundations, so that is quite an additional element. And another point is that under the 50-50 arrangement the governments are, in fact, taking 50 per cent of the profit, if you like, on the oil. Mind you, it certainly doesn't accrue to the oil companies.



MR. FRAWLEY: I can understand. I am simply using one point which must include development costs and community costs and your division with your partner and the division with whatever he is out there, the Sheik, they do ultimately arrive at the cost per barrel. I say your cost in Montreal is that cost plus tanker cost to bring it to Montreal.

MR. DOWN: Yes. You are taking it from the group point of view.

MR. FRAWLEY: Yes. By the way, do you use the Montreal-Portland pipeline or propose to?

MR. DOWN: Yes, we do.

MR. FRAWLEY: You have been requested to become a shareholder in the Montreal pipeline.

MR. DOWN: We asked if we could become a shareholder. There was astonishing alacrity in letting us in.

MR. FRAWLEY: I didn't think it worked that way at all. I thought it was a real closed shop and you had to belong or you could not bring your oil in. I suppose that is really what it is.

MR. DOWN: I am sorry, could you repeat that? ..

MR. FRAWLEY: I say, I think it is so but I want to really know -- we could find out next week in Montreal -- I understand all of the refiners must be shareholders. All of the Montreal



refiners seeking to bring oil through the pipeline must be shareholders. Did you understand that?

MR. DOWN: May I ask if you will put it another way? What you are saying is: is it possible for someone to move oil in that line without being a shareholder? I am afraid I don't know.

MR. FRAWLEY: When you made a request to become a shareholder you were snapped up right away.

THE CHAIRMAN: It is just like an Alberta co-operative.

MR. FRAWLEY: You are speaking about the wheat pool, I guess. I have been away from there so long I don't know. I understand there are some egg pools or something. I don't know.

THE CHAIRMAN: They are not too fresh!

MR. FRAWLEY: I have been so absorbed in the 37 per cent of producibility I cannot see much else. Now Mr. Down, there were some things that struck me in your brief that I was interested in. At the bottom of page 19 and the top of page 20 you say: "We should have a finding rate of about 300 million barrels per year and we only have a finding rate of 400 million barrels per year". Then there is a figure in Appendix B that struck me where you show that our crude oil only moved from 2849 million barrels in 1956 to 2874 million



barrels in 1957. There is nothing very rapid about that, is there?

MR. DOWN: No.

MR. FRAWLEY: Well, Mr. Down, I put it to you that the fact that we are now only able to sell 37 per cent of our producibility has a lot to do with the lack of incentive in getting out those crude oil reserves. Do you agree with me?

MR. DOWN: I think it is bound to have an effect.

MR. FRAWLEY: And you also say, and I must say that you are not alone in that, although I am quite certain you prepared this brief entirely on your own without any consorting with your fellow refiners in Montreal.

MR. DOWN: We certainly did.

MR. FRAWLEY: In fact I think you said a good deal came from Britain.

MR. DOWN: In consultation with us.

MR. FRAWLEY: I call your attention to the fact that although you feel that this is a purely short run thing and that our markets in the United States will increase...

MR. DOWN: That is correct.

MR. FRAWLEY: Now, have you any views as to how soon they are going to increase, Mr. Down?

MR. DOWN: No, I don't think we have.

MR. FRAWLEY: Now dealing with very



recent events it would appear from reading the Canadian press that Mr. Eisenhower did not think there was going to be any very immediate change in those oil restriction laws or provisions in the United States. Is that what you gathered from the very down-to-earth talk he gave the Canadian people yesterday?

MR. DOWN: I did not read the paper too thoroughly this morning. I think what he indicated was they did not look at it on a short-term basis from year to year and that America felt that they should -- how can I put it?

THE CHAIRMAN: I don't think you need to struggle to answer that question. After all we can all read it.

MR. DOWN: I am sticking my neck out. I should not be talking on something that is an American-Canadian affair. I have not been over long enough to really comment on it.

MR. FRAWLEY: I put it to you from my reading I gather we have to live with those oil restrictions for some little time. Did you get any different opinion than that, Mr. Down?

MR. DOWN: It could be.

MR. FRAWLEY: Do you agree with me that while we have to live with those restrictions against our exports into the United States we have within our own borders a large market running to



about 300,000 barrels a day? That seems to be the curious contradictory situation, as I see it, and as I think the producers in Alberta see it. What do you think about that?

MR. DOWN: It is certainly a situation of temporary difficulty, yes.

MR. FRAWLEY: It comes back to how long must we wait until the temporary difficulty is resolved without going to Montreal. That is about it?

MR. DOWN: Yes.

MR. FRAWLEY: Have you been in the oil business long, Mr. Down?

MR. DOWN: Since 1938.

MR. FRAWLEY: With BP most of the time?

MR. DOWN: Yes, except for the War years.

MR. FRAWLEY: You were in London with them?

MR. DOWN: I have been in Palestine and Israel and before the War I was in Iraq. I have been in London nine years.

MR. FRAWLEY: Do you agree with me, as you observe this situation in Canada, it is very difficult to know when the situation may be improved if we are going to rely entirely upon our exports to the United States?

MR. DOWN: I think that the oil industry traditionally tends to have fairly considerable ups and downs and this is undoubtedly a down.



MR. FRAWLEY: Now, you do make, on page 20, a statement that I find intriguing, but I wonder if I quite understand it, in which you refer to the export of our natural gas. I am wondering, if we were successful in getting as liberal a gas export policy as any one could ask for, how that is going to assist our oil industry? Isn't that going to give us more oil production that we aren't going to be able to do anything with?

MR. DOWN: I don't think I quite understand that question. Would you rephrase it?

MR. PATTILLO: Yes. If we have a gas export policy which means that the industry goes out and finds more gas - gets more gas - to put into the export market, particularly along the foothills belt, and they find more crude oil - and that seems to be the opinion - the gas we are going to get to meet the further needs is going to be gas associated with oil; so our gas export policy produces more crude and we have no market for it.

MR. DOWN: I see what you mean. What we had in mind was delivery to areas, temporarily, of the additional oil, and that it probably would be a palliative; but, at the same time, on the longer haul, we still believe that there is a



sufficiently large potential market in the States to find an outlet for Canadian oil that is worth waiting for, at least a little time, before going to try and capture the Montreal market.

MR. FRAWLEY: I mean, additional markets for oil in the industry.

MR. DOWN: Yes. This gas line is almost by way of comment. It does seem the one way of easing the situation from the point of view of the general economics of Alberta.

MR. PATTILLO: Mr. Frawley: you know that the voluntary oil restriction program in the United States hasn't actually of itself been any detriment to us, because it is a fact that our exports have never come up to the amount of the restrictive code. You are aware of that?

MR. DOWN: So I understand.

MR. FRAWLEY: That means, of course, doesn't it, that the matter of commercial preference comes into it at that point?

MR. DOWN: It may be a matter of temporary economics.

MR. FRAWLEY: It isn't unfair to call it commercial preference when you look at it from the standpoint of the independent refinery.

MR. DOWN: Commercial preference has a very special ring in my mind. I don't know if we are talking on the same lines. I merely



say that I think there is this temporary area where the economics may well lead to a decision on Canadian crude.

MR. FRAWLEY: Perhaps there is no difference between us there. If Shell Oil Company choose to go to Borneo to supply their Puget Sound refinery rather than take it out of our pipe line which runs right into the area, it might be company economics, but surely it is not very wrong to call it commercial preference?

MR. DOWN: That is what I was thinking of, in terms of preferential tariffs in the Commonwealth; there seems to be a rather special implication.

MR. FRAWLEY: So you say it is a combination of the voluntary oil restriction program and the preferences of the various companies. These integrated companies have operations in the United States and choose to supply their refineries from their own production rather than to bring it in from Canada. Is that what the situation amounts to?

MR. DOWN: Yes; but I still think it is likely to be temporary.

MR. FRAWLEY: So we get back to this, that it is a question of how long is "temporary"?

MR. DOWN: Yes.

THE CHAIRMAN: Could we have a ten-minute



break on that note, Mr. Frawley?

--- A short recess.

THE CHAIRMAN: Gentlemen, I think we should get started.

Mr. Frawley?

MR. FRAWLEY: Thank you, Mr. Chairman.

I just wanted to ask you one more thing, Mr. Down, and that is about your future expansion, as you see it, and it is obviously a matter of estimate; but your next refinery would probably be, as you told my friend Mr. Pattillo - you said you would hope and expect to have more than just one Montreal refinery?

MR. DOWN: That is correct.

MR. FRAWLEY: And that you didn't expect just to build two refineries in Montreal to supply - to find - an even bigger outlet for your Middle East crude. You would go into the west?

MR. DOWN: It is our present intention; but we aren't, perhaps, looking too far ahead too specifically.

MR. FRAWLEY: If you came into the Toronto-Hamilton area, for instance, which is a very good market, is it not? ...

MR. DOWN: Yes, it certainly is.

MR. FRAWLEY: ... at least, so we are told, many times... you might find it economic to bring



in Middle East crude and probably bring it up by water through the seaway into a refinery in the Toronto-Hamilton area?

MR. DOWN: I think that might work out ~~that~~ there are probably operating difficulties in terms of trans-shipping crude through the seaway.

MR. FR.WLEY: If you did that there might be a question of company economics or commercial preference coming in there which would guide you and help you to decide what to do?

MR. DOWN: I don't really want to pre-judge what we might do. I would be inclined to think that if we were putting in a second refinery based on Canadian crude it might be even further to the east; and if we wished to increase our imports they would come to the Montreal refinery which would have been expanded. But I am bound to say that, in the long haul, the picture we envisage is of a refinery somewhere in eastern Ontario - possible the Quebec area, in-growing itself, with the volume actually increased but with the geographical area decreasing.

MR. FR.WLEY: I put it to you that we must always remember that you are, in Canada, two things. You are a Middle East producer of crude with vast reserves, and a very welcome explorer in western Canada. That is what you are?



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MR. DOWN: Yes.

MR. FRAWLEY: I put it to you that it is just common sense to expect - and I shall leave this to your decision entirely - that you might use Middle East crude through the facilities of the seaway and refine it at a refinery in the Toronto-Hamilton area, and maybe even at the lakehead.

MR. DOWN: Well, that is a hypothesis which I really might go along with, but from a purely practical point of view it would be a matter of judgment. As I said, I think the economic frontier, if I can call it that, is somewhere in eastern Ontario. It does depend on the future trend of prices, and it is not a hard and fast line. There is a sort of ebb and flow.

MR. FRAWLEY: I put that last question to you having in mind that we now know that Venezuelan crude is being barged up the Mississippi right into the heart of the United States.

MR. DOWN: That I understand. I don't know too much about it, but I understand that is so.

MR. FRAWLEY: And I am putting it to you, as my last question, Mr. Down, would we be so very wrong to decide in this sort of situation, with your Middle East crude coming in, with the danger of penetrating right to the lakehead, and with Venezuelan crude, again, coming right up, perhaps,



into the Chicago and even the Minneapolis area - to take what some people call our natural market - and British Borneo crude supplying our own pipe line area - because you know we have a pipe line finger right into Puget Sound - if that is the situation is there too much fault to be found if we become a little nationalistic in that we want to take our full Canadian market anyway?

MR. DOWN: I would concede that you have got quite a difficult problem.

I think my answer is that it is the remedy that concerns us. It is so drastic, and it distorts the business of the World oil market, and it has an effect on Canada's own position and World trade in general.

It seems to us that what you are suggesting as an alternative concerns us. But I will concede that it is a difficult problem.

MR. FRAWLEY: I think you said that your refinery capacity was 25,000 barrels a day?

MR. DOWN: Yes.

MR. FRAWLEY: I put it to you that the drastic situation you are speaking of - and I don't want to minimize it - but can I put it this way, that, in your case, the drastic situation is simply that 25,000 - a mere 25,000 - barrels per day is left locked in the Middle East? Is that what happens, in your opinion.



MR. DOWN: I think it is not quite as easy as that. This is a strictly British Petroleum point of view. We have got these long-term plans for Canada, and an integral part of that plan is selling our Middle East or other oil in the Montreal area as a stepping stone to further development. Clearly that oil is owned 100 per cent. It generates capital which will continue to flow in, we hope, to Canada's benefit and to our own. If that supply is cut off, the point is that we have practically no Canadian crude at present. Our crude production is fractional. That is the point I would like to make. This generation, in the formulation of our plans, I do not think that they will change in objective, but the pace, I would say, will inevitably be affected.

MR. FRAWLEY: Thank you, Mr. Down. Might I only say that I am obliged to you for your forbearance and the way you have answered.

MR. DOWN: It has been a pleasure, Mr. Frawley.

MR. COMMISSIONER HOWLAND: Mr. Down, just by way of information: in your first chart you refer to energy demand projected and you have some terms there that I would just like to understand. If you do not, perhaps you could get the information.

MR. DOWN: I hope I do too.

MR. COMMISSIONER HOWLAND: Because this



is very valuable material. You refer particularly to a hard coal equivalent. I do not know that term. I wonder whether you could find it out for us. I would suggest that this is the English background of the material?

MR. DOWN: Yes. I think it is the thermal sort of value. They have probably taken hard coal as the yardstick for all this. I cannot answer the question but I will find out.

MR. COMMISSIONER HOWLAND: We do it too with the tons of coal equivalent, but the term "hard coal", I do not know whether that is 13,500 b/d or 14,000, but it is a technical thing. But these charts, I suggest, are so valuable that it would be worth having your interpretation.

MR. DOWN: I would be glad to find out for you.

MR. COMMISSIONER HOWLAND: I would like to follow through a little more this "break-even" study of location of factors and so on, but there has been a lot of questioning on it now. Just one question on it. When you made that study, you came over obviously representing BP. Did you get Canadian consultants and then sit down and look at the total market to be served and then decide the location on the basis of prices of Sarnia or Middle East or BP?

MR. DOWN: First of all, answering the



first part of your question, we did the study ourselves. We came over here and we did not consult with anyone except to the extent that we had very valuable assistance from the Department of Trade and Commerce and other statistical departments, but as far as our costs are concerned, if I understand your question correctly, the choice of the site of the refinery was based on the outline stepping stone development. With our own sources of crude, it really was the only logical place. The Toronto area, which under certain circumstances for the import of crude is competitive, it is sufficiently far, shall I say, to the west to be a doubtful quantity. I may say I think at the same time, apart from the commercial considerations in selling our own crude, we did bear in mind the political side. We tried, shall I say, to put imported crude into Toronto, which I have described at certain times as a marginal area for imports. Therefore, again on the long-term, it might commercially redound against us.

MR. COMMISSIONER HOWLAND: Your plan to serve the market and the definition of the market was not anything to do with the Quebec area and Ontario?

MR. DOWN: It is Eastern Ontario, but strict marketing considerations may distort that to some extent. You might want certain stations



down a highway and you want to get further up. Generally speaking, our market is Quebec and East and North Ontario, although for prestige and other reasons. In fact, there are stations much further afield.

MR. COMMISSIONER HOWLAND: There was just one other remark you made in the discussion where you talked about future prospects in regard to freight rates and the tanker rates. You mentioned that the policy would likely be to establish a larger fleet than would be necessary to have a cushion against, say, a future Suez. Then you suggested that this would tend to reduce prices. One of the mysteries of the economics of oil seems to be that we have a lot of cushions all over the place and yet prices go down. Normally a cushion tends to push prices up.

THE CHAIRMAN: I think you said freight rates.

MR. DOWN: Yes. I am by no means an expert on this and I am sticking my neck out in saying what I did. I merely wished to indicate that in the past there have been tanker shortages which have resulted in substantial increases in freight. As a result of the experience over the Suez crisis there will be a tendency, if, for example, a big group is considering a tanker program, if the considerations are marginal, they will tend to



take decisions to build rather than not. I am saying that as an expression of opinion.

MR. COMMISSIONER HOWLAND: You mentioned that it was to take out the situation previously obtaining, in other words, when there was a shortage of tankers. Thank you very much.

THE CHAIRMAN: Mr. Down, in answer to a question from Mr. Pattillo and also one from Mr. Frawley, you mentioned that the move to the Montreal market, taking Canadian crude to the Montreal market, would be such a drastic step --you used those words-- so drastic that it put the world oil supply situation into turmoil. Are you familiar with what happened when Interprovincial built its line from Western Canada as far as Superior and then down to Sarnia and extended it on to Toronto? Did those moves drastically disturb the world oil supply markets?

MR. DOWN: No, they did not, Mr. Chairman. I did not intend to imply that there would be an impact on the world oil supply situation. When I said "a drastic step", I think that we in the oil industry, having regard to what we consider would in fact be government intervention, it would have repercussions in that intervention by way of controls and quotas and tariffs and what have you. I was not thinking in terms of world trading so much; it was just Canada taking a step from the world trading point of view.



THE CHAIRMAN: You are assuming that in moving Canadian crude to Montreal some sort of quota or tariffs or embargo would be necessary, and it is that you feel would be such a drastic move in international trade generally?

MR. DOWN: Yes.

THE CHAIRMAN: That explains what you had in mind?

MR. DOWN: Yes.

THE CHAIRMAN: Is it a matter of public knowledge, the ownership of British Petroleum?

MR. DOWN: I take it that in asking that you want to know the British Government's holdings. They hold about 55 per cent of the equity. They have several representatives on the Board of Directors too.

THE CHAIRMAN: Thank you very much, Mr. Down, for being so good as to give us this information.

MR. DOWN: Might I just correct a couple of things for the record?

THE CHAIRMAN: Yes.

MR. DOWN: First of all, when I quoted Triad mpr, I think I gave the figure as per month. It should, of course, be per day.

The other point is this, if I might give it. I think that in replying to Mr. Pattillo I said that there was no funded debt in our companies. That is perfectly true in reference to BP Exploration



Canada and BP Canada. In Triad, since we joined the company, we, in fact, had a note issue of \$30 million, of which we took up approximately a little more than half and the public took up the other half. I might also add that it is our intention to invite further Canadian participation, by way of possible equity, but at present, in our slightly uncertain situation, we want to get a firm base first.

THE CHAIRMAN: Thank you very much, Mr. Down. You have been very kind, and I wish you would express our appreciation to your principals in England for the contribution that they have made to this world oil picture in your brief. The brief is going to be of big assistance to the Commission. I want to thank you for coming here today and being so patient.

MR. DOWN: Thank you very much. It has been a pleasure.



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Submission of
CANADIAN BECHTEL LIMITED

Appearances:

| | | |
|------------------------|---|----------------|
| Mr. S. M. Blair | - | President |
| Mr. H. F. Waste | - | Vice-President |
| Mr. J. F. Lynch | - | Engineer |
| Mr. R. L. Bridges | - | Director |
| Mr. S. D. Bechtel, Jr. | - | Director |

THE CHAIRMAN: Mr. Pattillo?

MR. PATTILLO: Mr. Chairman, we now come to the last submission which we will receive in these hearings in Toronto, and which will be the submission of Canadian Bechtel Limited.

At the request of the Commission, Canadian Bechtel Limited have made a study of routes and economics of pipe line transportation from Edmonton to Montreal and they have submitted that study to us.

Mr. Blair, the President of the corporation, has also written to you in your capacity as Chairman a covering letter and I am proposing that letter be marked as T-10-2, and that the brief be marked as T-10-3.

---EXHIBIT NO. T-10-2: Covering letter from Canadian Bechtel Limited to the Chairman, dated July 10, 1953.



---EXHIBIT NO. T-10-3: Submission of Canadian
Bechtel Limited.

MR. PATTILLO: I am going to ask Mr. Blair and his associates to come forward and to read the letter in whichever order he wishes to read it, either before or after the submission.

THE CHAIRMAN: That is a letter as of this date, the longer letter?

MR. PATTILLO: The longer letter.

THE CHAIRMAN: Please proceed, Mr. Blair.

MR. BLAIR: I will first read this covering letter, which I felt might explain the principles we were endeavouring to follow in preparation of the brief.

"We believe that a few explanatory remarks will be helpful in considering the report that we have submitted to your Commission on alternative methods of transporting western Canadian crude oil to Montreal by pipeline.

"When requested by the Commission to make this study, we recognized that so many variables could be taken into consideration, that the study could easily become too complex and would not in our opinion give a sufficiently definite finding. We, therefore, felt that it would be most effective if we made exactly the same approach to this subject for the Commission that we would, if making it for



industry.

"Thus, the basic questions are the type of oil to be transported, the route for the pipeline, line sizing, rates of throughput, the capital investment required, and the return thereon. We have given these factors consideration in the same manner as we have previously in our role as engineers and managers on the other major Canadian pipelines. We believe that by so doing, we are able to provide you with a normal commercial yardstick from which the economics of any other variables desired can be measured.

"We fully recognize that there are many other important factors bearing on the consideration of a pipeline, such as national defence, relief of unemployment, support of Canadian industries, or other items of national policy which, however, are factors that lie outside our terms of reference.

"If, however, it is desired to deviate from the normal commercial approach because of any such factors, we believe that our investigation provides a base from which such variations can be evaluated.

"Since the report is necessarily somewhat technical, with supporting details and tables, I propose to summarize the material contained therein by reading selected portions and then



expanding briefly on those factors that we believe are of major importance.

"As engineers and constructors of pipelines, we have directed the scope of this submission to a discussion of the pipeline transportation aspects of the over-all problem of delivering western Canadian crude oil to Montreal.

"Our submission compares two basic methods of transporting crude oil from Edmonton to Montreal by pipeline:

- (1) a new direct pipeline system, and
- (2) an expanded Interprovincial-Lakehead system.

Three alternate routes for a new line are first studied and the most economical route selected. This route is then compared with the expanded Interprovincial system over a wide range of crude oil volumes to determine the transportation costs of the two methods.

"Our submission is an engineering and economic analysis designed to present factual information that will be of use to the Royal Commission in their consideration of various pipeline methods of transporting western Canadian crude oil to Montreal.

"The selection of the most economical route for a new pipeline between Edmonton and Montreal was arrived at by estimating capital



and operating costs for the three basic routes shown on the route map in the submission. We ascertained Route B (that is the one marked in green, via Sault Ste. Marie) to be the most economical, having a capital cost of \$345,000,000 and an annual required revenue of \$68,800,000 at the comparison point of 255,000 barrels per day transported through a 30-inch diameter pipeline.

"For the route selected, we prepared preliminary designs to determine the most economical line size, capital costs and required revenues for a range of volumes transported from about 75,000 barrels per day to 350,000 barrels per day. This results in the group of curves shown in Figure 1 in our submission, where unit transportation cost per barrel of crude is plotted against average daily volumes transported."

I might just explain these curves on the maps. Each point on these curves is an optimum point in the throughput for the size of line. In other words, if you went up or down the scale that is a smaller throughput or a larger throughput, which would be less efficient at that particular point. That is in contrast to the type of curve where a line 30 inches in diameter has been set up with simply arbitrary stations and have throughputs other than the one specific design, where there would be less efficiency. In



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other words, there is only one maximum efficiency point on the line and these curves are drawing together a series of such maximum points.



We also considered an alternate method of transporting Alberta crude oil to Montreal by expanding and extending the facilities of the Inter-provincial-Lakehead system. This plan is much more complex. The Interprovincial system has multiple receiving and delivery points and also has excess or reserve capacity that varies throughout the system. To permit a fair comparison with a new direct line, we assumed two principles:

1. That the reserve capacity of the present system over and above the maximum requirements of the area presently served would be available for transporting crude oil to Montreal, and
2. That a fair share of the cost of this reserve capacity would be charged against the transportation to Montreal.

On the basis of these assumptions, we have made preliminary design and estimates of capital and operational costs for additions to the Inter-provincial system required to transport average volumes ranging from about 50,000 to 350,000 barrels per day from Edmonton to Montreal. The capital and operational costs of such additions, added to the prorated costs of reserve capacity utilized, result in the unit transportation costs for various average delivery volumes transported through the Interprovincial system as shown on Figure 1 in our submission.



Before turning to a detailed consideration of the submission, there are two factors of the utmost significance in determining the unit cost of transportation and we believe these factors are of such importance that they justify further amplification. They are: firstly, the average volume of oil to be transported and the relationship of such volumes to the design volume or capacity, and secondly, the return on investment.

"We will briefly analyze the effect of varying these two factors from those used in our submission.

"Ratio of Average Volume of Oil Transported to Design Capacity:

"Our submission covers a wide range of volumes. In all cases these volumes are average daily volumes and equal to 85 per cent of the design capacity. The difference being available to provide for such factors as:

(a) Fluctuations in refinery operations that result from the variations in seasonal demands, or those arising from any interruptions in the refinery operations, including routine shutdowns.

(b) Operational difficulties inherent in pipeline operations, particularly and including those associated with the



transporting of various grades of crude oil simultaneously through one pipeline system.

(c) The operational problem of gathering such various grades of crude oil in the necessary batches for transportation.

"In summary under normal conditions and recognizing the variables that have to be provided for, it is our judgment that the actual average throughput cannot be expected to exceed 85 per cent of the design capacity.

"If, however, a theoretical condition is assumed whereunder a load factor of 100 per cent could be realized, the resulting increase in the average volume transported would reduce the per barrel cost of transportation approximately 10 cents below that used in our report.

"Return on Investment: The second major factor to which we wish to draw particular attention is the return on investment or profit available to the pipeline company.

"Industry experience indicates that a projected net return of 5 per cent or more on capital investment is normal and our submission is based on a net return of 5 per cent.

"Continuing with this analysis, we may point out that if the projected return is reduced from 5 per cent to 4 per cent on capital investment



the result would be a reduction in the cost of transportation equal to approximately 7 cents per barrel. Similarly, if a return on investment of only 3 per cent is assumed the cost of transportation would be reduced by approximately 14 cents per barrel from that shown in our submission.

"We hope these comments will help in explaining to the Commission some of the important principles on which the submission has been prepared."

Now, if I may turn to the brief.

I. Introduction

Origin of Study: At the request of The Royal Commission on Energy, we have prepared this submission presenting our views concerning alternative methods of transporting Western Canadian crude oil to Montreal by pipeline, and comparing the transportation costs of those methods.

Plan of Submission: As engineers and constructors of pipelines, we have directed the scope of this submission to a discussion of the pipeline transportation aspects of the overall problem of delivering Western Canadian crude to Montreal.

Our submission compares two basic methods of transporting crude oil from Edmonton



to Montreal by pipeline:

- (1) a new direct pipeline system, and
- (2) an expanded Interprovincial-Lakehead system.

Three alternate routes for a new line are first studied and the most economical route selected. This route is then compared with the expanded Interprovincial system over a wide range of crude oil volumes to determine the transportation costs of the two methods.

Our submission is an engineering and economic analysis designed to present factual information that will be of use to the Royal Commission in their consideration of various pipeline methods of transporting Western Canadian crude oil to Montreal.

Because of the minor fluctuations in the Canadian-U.S. exchange rate, all our cost estimates are on a par exchange basis.

II. Transportation Requirements and Possible Methods

Operational Requirements

Origin and Destination: We have assumed in all cases that the crude oil will enter the system at Edmonton where many major crude oil gathering systems terminate. For simplicity and ease of comparison it is assumed that the oil to be transported has physical



characteristics of a light gravity crude oil such as that produced at the Redwater field.

We have further assumed that the crude oil will be transported directly to Montreal, where it will be received directly from the pipeline by the refineries.

For the expanded Interprovincial system, intermediate receiving or delivery points other than those now established have not been considered.

Range of Volumes: In our submission two terms are frequently used: "average volume" and "design volume". "Average volume" is the annual volume of oil to be transported, divided by the number of calendar days in a year. "Design volume" is the volume that the pipeline system must be able to handle on maximum volume days in order to attain its average volume over the year.

The average volumes and their corresponding design volumes investigated in this submission, expressed in barrels per day (B/D), are as follows:



| <u>Average Volume</u> | <u>Design Volume</u> |
|-----------------------|----------------------|
| 42,500 B/D | 50,000 B/D |
| 85,000 | 100,000 |
| 127,500 | 150,000 |
| 170,000 | 200,000 |
| 212,500 | 250,000 |
| 255,000 | 300,000 |

Possible Method #1: A New Direct
Pipeline System:

A new pipeline running directly from Edmonton to Montreal could be built over several alternate routes to transport Western Canadian crude oil in any volume desired.

Over the past ten years or so, many pipeline routes between Western and Eastern Canada have been investigated. Most of them fall into two main groups: those passing north of the Great Lakes, usually referred to as "All-Canadian" routes, and those passing south of the International Border, which can be termed "Lakehead" routes. We believe that these two groups of possible routes define the geographical limits for a West-East pipeline, a region lying between two existing systems: the Trans-Canada gas pipeline and the Interprovincial-Lakehead crude oil pipeline.

In searching for the most economic route



through this region we have considered three possibilities as depicted on the Route Map (page A-1):

| | <u>Distance</u> |
|---|-----------------|
| Route A - All-Canadian (via Trans-Canada route) | 2,100 miles |
| Route B - Joint Canada-US (via Sault Ste. Marie) | 2,060 miles |
| Route C - Joint Canada-US (via Lakehead route) | 2,245 miles |

We believe these routes to be the most feasible from a new pipeline system from Edmonton to Montreal. The economic choice of these three is used as a basis for comparing the economics of a new direct system and the expanded Interprovincial system.

Basis of Route Comparisons: In developing the capital costs for the three routes, we used certain design criteria and assumptions.

We have compared Routes A, B and C on the same volume and line size basis: an average volume of 255,000 barrels a day and a line size of 30-inch diameter pipe.

It has been assumed that all crude oil for Montreal would start through the system at Edmonton and that it would be received directly from the pipeline by the Montreal refineries. We have not provided a significant amount of storage capacity at Montreal, since we understand that the present practice of the refineries is to take crude oil on a direct delivery basis from the



Portland-Montreal pipeline.

We have no specific crude in mind, but for design purposes we have assumed that it would have characteristics similar to those for Red-water crude; a viscosity of 25 centistokes at the assumed 30°F pipeline flow temperature, and a specific gravity of 0.85.

Allowable pipe pressures are based on an allowable fibre stress of 65 per cent of the minimum yield, which is our normal design practice.

Capital Costs of the Three Routes: On the basis of a pipeline system with an average volume of 255,000 barrels per day, we have estimated the total costs for all three routes -- A, B and C. Our estimates are presented in Table 1, page A-3. They show that Route A would cost approximately \$395 million, Route B \$345 million, and Route C \$368 million.

These estimates are based on June 1958 Canadian and United States prices for materials and permanent equipment. It is anticipated that for pipeline sections lying in Canada, all major items of permanent material and equipment would be of Canadian manufacture. If Canadian pipe mills could not supply the full mainline pipe requirements, we have assumed that United States manufacturers would deliver their pipe in Canada at a price equivalent to what the price would have



been from Canadian mills.

Our estimates of pipeline installation costs are based on firsthand knowledge of our pipeline organization covering the areas traversed by the three routes. Over the past several years, our people have evaluated construction problems and costs along each of these routes, either as part of their work on actual construction projects or through route reconnaissance surveys.

All applicable Dominion, Provincial and United States taxes have been included, as have adequate allowances for contingencies, corporate organization, interest during construction, and financing expense.

The financing of funds required was assumed to be on the basis of 75 per cent debt and 25 per cent equity, the funded debt bearing an average annual interest rate of 5 per cent. It was further assumed that the financing plan would make the funds required available in Canadian and U.S. currencies without incurring financial penalty on exchange rates.

Operating Costs of the Three Routes:

To transport an average volume of 255,000 barrels per day through pipeline systems built along the three routes considered would require the following estimated annual revenue:



| | |
|---------|---------------|
| Route A | \$ 78,130,000 |
| Route B | \$ 68,801,000 |
| Route C | \$ 73,352,000 |

As Table 2, page A-4, shows, this would mean a unit transportation cost of 83.9 cents a barrel for Route A, 73.9 cents for Route B, and 78.8 cents for Route C. These costs are for first year operations and are based on operational items and cost factors as defined below:

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1. Volumes Delivered - - Average volumes delivered are based on a load factor of 85 percent of the design volume.
2. Cost of Plant - - This is the capital cost of the entire system.
3. Annual Transportation Costs - -
 - (a) Operation: the cost of pipeline and pump station direct expenses, plus the cost of power or fuel; also included is the cost of administration and overhead, which is based on a fixed allowance, plus 50 percent of the cost of pipeline and pump station direct expenses;
 - (b) Depreciation: calculated on the straight-line method at 3-1/2 per cent per year (28.6 years);
 - (c) Amortization of Financing Expense: calculated on the straight-line method at 4 per cent per year (25 years);
 - (d) Interest: computed at the rate of 5 per cent on the funded debt;
 - (e) General Taxes: property taxes applicable to pipelines, assumed to be 1 percent of the capital investment;
 - (f) Income Taxes: based on a rate of 47 per cent of taxable income. For routes lying partly in the United States, it is assumed that no U.S. income tax will be paid on



operations over the pipeline sections involved, as the crude oil destined for Montreal would be "in bond" and not available for sale or delivery within the United States.

(g) Net Income: based on a return of 5 per cent on cost of plant.

4. Unit Cost of Transportation - - The average annual cost of transporting one barrel of crude oil.

Selection of the Most Economic Route:

Based on our analysis, Route B (joint Canada-US via Sault Ste. Marie) is the economic choice of the three routes considered for moving crude oil from Edmonton directly to Montreal by a new pipeline. It has lower capital costs and lower transportation costs than either Route A or Route C.

Possible Method #2: An Expanded Inter-provincial-Lakehead System: To describe an alternate method based on an expansion of the existing Inter-provincial-Lakehead (referred to in this submission as the "Interprovincial" system) system is not a simple task. The existing system is a complex one, with multiple receiving and delivery points, and yet its development as an alternate method must be discussed in a manner that permits a fair comparison with a new direct system. To do this we must first look at the operation of the existing facilities. After that, the changes that would have to be made



for the system to carry the desired average volumes to Montreal can be discussed.

We have made an engineering analysis of the Interprovincial system. While the information and time available for this were somewhat restricted, we do not think a more detailed analysis would significantly change the results. For our analysis, it has been necessary for us to make certain assumptions concerning Interprovincial's operating program, and to use generally-available information about its system. We believe our findings are representative of present operations.

1958 Facilities and Sources of Crude Oil:

The facilities of the Interprovincial system as it will be after completion of the announced 1958 expansion program are detailed in Table 3, page A-5. The table also sets forth the corresponding system capabilities for those facilities.

To supply the estimated design volume for the Interprovincial system, we have assumed that crude oil will enter the pipeline system at Edmonton, Regina and Cromer, as is now the case. Table 4, page A-6, lists the supply points and the volumes that will enter at those points.

Pipeline Demand in Areas Now Being Served:

Interprovincial and Lakehead now deliver crude oil at about a dozen or more points along their pipeline, most of it directly to refineries. There are



fluctuations in delivery volume, as well as variations in the type of crude delivered.

In the absence of our own specific survey of refinery requirements, we have based our estimates on published information concerning the projected 1960 capacity of the refinery areas now being served.

The basic refinery demand assumptions underlying the estimated maximum volumes of crude oil to be transported, as summarized in Table 4, are:

- a) 100 per cent of the full capabilities of the refineries now being served between Edmonton and Bay City;
- b) 90 per cent of the full capabilities of the refineries now being served in the Sarnia and Toronto areas plus an allowance to meet the demands of Toronto refinery expansions now in the planning stage.

We believe our estimated total volume represents a conservative figure for design purposes: a maximum daily delivery requirement of 413,000 barrels to be met by the Interprovincial system in serving its present market areas.

Reserve Capacity in the Present System:

We have estimated both the daily delivery capabilities of the Interprovincial system after completion of the 1958 expansion program and the daily delivery requirements of the refineries now served. The



differences between capabilities and requirements indicate the reserve capacities available for increases in design volume. These figures, which are detailed in Table 4, page A-6, may be summarized as follows:

| <u>Pipeline Section</u> | <u>Barrels per Day, by Pipeline Sections</u> | | |
|-------------------------|--|------------------------------------|-------------------------|
| | <u>Daily Delivery Capabilities</u> | <u>Daily Delivery Requirements</u> | <u>Reserve Capacity</u> |
| Edmonton-Regina | 275,000 | 263,000 | 12,000 |
| Regina-Cromer | 379,000 | 234,000 | 145,000 |
| Cromer-Gretna | 379,000 | 354,000 | 25,000 |
| Gretna-Clearbrook | 352,000 | 321,000 | 31,000 |
| Clearbrook-Superior | 345,000 | 275,000 | 70,000 |
| Superior-Sarnia | 261,000 | 248,000 | 13,000 |
| Sarnia-Port Credit | 109,000 | 104,000 | 5,000 |

To place the expanded Interprovincial system on a comparable basis with a new direct system, we have excluded existing gathering facilities.

III. ANALYSIS OF A NEW DIRECT PIPELINE SYSTEM
OVER ROUTE B: Having determined that Route B, the joint Canada-US route via Sault Ste. Marie, is the economic choice, we then analyzed for this route only the cost of transporting various average volumes of crude oil from Edmonton to Montreal. A fairly wide range of average volumes had to be analyzed, both because we do not have a detailed knowledge of the refining and marketing plans of the Montreal refineries and because we wished to present a compre-

hensive report. The actual deliveries considered, and the design capacities needed to supply those deliveries, are as follows in barrels per day:

| <u>Average Volume</u> <u>(Basis for Transportation Cost)</u> | <u>Design Volume</u> <u>(Basis for Design)</u> |
|---|---|
| 42,500 B/D | 50,000 B/D |
| 85,000 | 100,000 |
| 127,500 | 150,000 |
| 170,000 | 200,000 |
| 212,500 | 250,000 |
| 255,000 | 300,000 |

Optimum Line Size to Meet Montreal Operational Requirements: The selection of the optimum line size for transporting a particular average volume of crude oil was determined by an analysis of the capital costs and transportation costs for varying diameters of pipe and the volumes to be transported. Table 5, page A-7, presents for Route B the estimated capital cost and unit transportation cost for the optimum line size for the range of volumes considered. These figures are summarized as follows:

| <u>Average Volume</u> | <u>Pipe Diameter</u> | <u>Estimated Cost</u> | |
|-----------------------|----------------------|-----------------------|-----------------------|
| | | <u>Total</u> | <u>Transportation</u> |
| 85,000 B/D | 20-inch | \$221,755,000 | \$1.390/bbl |
| 127,500 | 24 | 258,482,000 | 1.079 |
| 170,000 | 26 | 287,138,000 | 0.904 |
| 212,500 | 30 | 326,303,000 | 0.815 |
| 255,000 | 30 | 344,910,000 | 0.739 |



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IV. ANALYSIS OF THE EXPANDED INTERPROVINCIAL
SYSTEM. Allocation of Existing System Cost
Between. Existing Demand and Montreal Demand.

The existing Interprovincial system, as it will be after completion of the 1958 expansion program, has some reserve capacity as we have already discussed. If the average daily delivery rate for the system rises because additional volumes are carried for delivery to Montreal, the existing reserve capacity will be used to an extent depending on the volume of the Montreal deliveries. In determining the capital cost of facilities for providing deliveries to Montreal, therefore, it is only equitable to include some proportionate share of the capital costs of the existing facilities.

To do this, we have first allocated main-line plant cost between existing demands and reserve capacity on a "barrel-mile" basis. We have then made a second allocation of the reserve capacity cost to the new loads required by Montreal deliveries on the basis of how much reserve capacity is utilized. This approach results in the following percentages and amounts of the 1958 Interprovincial plant being chargeable to the Montreal deliveries (see Table 6, page A-8):

| <u>Montreal Deliveries</u> <u>(Average Volumes)</u> | <u>Percent of</u> <u>1953 System Cost</u> | <u>Value</u> |
|--|--|--------------|
| 42,500 B/D | 8.1 | \$22,000,000 |
| 85,000 | 10.2 | \$27,000,000 |
| 127,500 (and over) | 11.6 | \$31,000,000 |

Restatement of Facilities Needed to

Expand the Interprovincial System:

It has already been brought out that if the Interprovincial system is to transport crude oil to Montreal it will need a new pipeline section covering the 345 miles between Toronto and Montreal, as well as some pipeline loops and additional pumping horsepower in its present system. Table 7, page A-9, summarizes the facilities we believe to be needed to meet Montreal requirements. Table 3, page A-10, shows the estimated cost of adding the various facilities for transporting any of the volumes considered, plus the prorated portions of the existing system. Summarized, these costs are:

| <u>Average Volume</u> | <u>Total</u> | <u>Total less prorated share of existing sys- tem: New Capital Required</u> |
|-----------------------|---------------|---|
| 42,500 B/D | \$ 55,582,000 | \$ 33,582,000 |
| 85,000 | 106,928,000 | 79,928,000 |
| 127,500 | 181,265,000 | 150,265,000 |
| 170,000 | 235,741,000 | 204,741,000 |
| 212,500 | 272,106,000 | 241,106,000 |
| 255,000 | 321,022,000 | 290,022,000 |

Transportation Cost for Existing Volumes

and Montreal Volumes: After analyzing the consolidated statements of the Interprovincial system, we have developed what we believe to be



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a realistic cost for transporting crude oil from Edmonton to Montreal. Our estimates are on the same basis as those for the new direct pipeline system via Route B, and include provision for a 5 per cent return on the estimated plant cost for the facilities required for transporting Montreal deliveries. Table 9, page A-11, shows the cost of transportation for each of the average volumes investigated. The findings are summarized as follows:

| <u>Average Volume</u> | <u>Transportation Cost</u> |
|-----------------------|----------------------------|
| 42,500 B/D | \$0.680/bbl. |
| 85,000 | 0.666 |
| 127,500 | 0.760 |
| 170,000 | 0.747 |
| 212,500 | 0.694 |
| 255,000 | 0.691 |

V. ECONOMIC COMPARISON OF THE TWO SYSTEMS:
NEW DIRECT SYSTEM VS EXPANDED INTERPROVINCIAL SYSTEM.

On Figure 1, Page A-2, we present a graphic comparison of two alternate systems for transporting crude oil from Edmonton to Montreal -- one consisting of a new direct system via a joint Canada-US route through Sault Ste. Marie (Route B), and the other consisting of the Interprovincial system as expanded to handle Montreal deliveries. For both systems, Figure 1 shows the variation in unit transportation costs for alternate average volumes and pipe diameters. It indicates the most attractive pipeline size for any average volume.

The following table is a condensed



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7402

presentation of the capital requirements, operating costs, and unit transportation charges for both systems, all shown for purposes of comparison:

(See Next Page for Table)

| Montreal Delivery Volumes (B/D) | Estimated Cost | | | |
|------------------------------------|------------------------|------------------------|----------------------------|-------------------------|
| | Transportation | | Total New Capital Required | |
| | New Direct Pipeline | Expanded Interprov. | New Direct Pipeline | Expanded Interprov.* |
| 42,500 | - | \$0.680/tbl | - | \$33,582,000 |
| 85,000 | \$1.390/bbl | 0.666 | \$221,755,000 | 79,928,000 |
| 127,500 | 1.079 | 0.760 | 258,482,000 | 150,265,000 |
| 170,000 | 0.904 | 0.747 | 287,138,000 | 204,741,000 |
| 212,500 | 0.815 | 0.694 | 326,303,000 | 241,106,000 |
| 255,000 | 0.739 | 0.691 | 344,910,000 | 290,022,000 |

* These figures do not include the prorated value of existing reserve capacity.

They represent only the incremental capital cost for the expanded Interprovincial system. However, the transportation costs per barrel do reflect the prorated value.



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It should be stressed, as we have already mentioned in this submission, that the bases used to formulate the cost analysis for both systems are identical and have been applied in the same manner.

VI. CONCLUSIONS. If Alberta crude oil is to be brought in by pipeline to supply the needs of the Montreal market, we have reached the following conclusions:

1. From an engineering standpoint, there are no insurmountable problems involved in the construction or operation of an oil pipeline from Edmonton to Montreal.
2. If an entirely new pipeline system is to be built, the most economical route parallels the Interprovincial line to Superior and thence goes eastward through Sault Ste. Marie directly to Montreal.
3. For the movement of average daily volumes of crude oil up to 300,000 barrels, transportation by an expanded Interprovincial system has an economic advantage over a new direct pipeline system. Based on the conditions and assumptions outlined in the report at an average daily volume of 250,000 barrels, the cost of transportation in a new direct pipeline will be 73.9 cents per barrel and 69.1 cents per barrel through the expanded Interprovincial system. At lesser volumes the economic advantage is even greater.



4. Construction of an entirely new pipeline system or a major expansion of the Interprovincial system would, in our opinion, require two construction seasons for completion.

THE CHAIRMAN: Thank you very much,
Mr. Blair.

I am sure that there will be some questions which counsel will wish to ask you and your colleagues, so I think we should adjourn for lunch and re-assemble here in this room at two-fifteen in the afternoon.

---Whereupon the proceedings adjourned at 12.30 p.m.
to resume at 2.15 p.m.



--- On resuming at 2.15 p.m.

THE CHAIRMAN: The Commission will now resume its hearings. Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman. Mr. Blair, you have had an opportunity to study what I would call the first engineering report of Dutton-Williams, prepared by that company for the Home Oil Company and presented to the Commission by the Home Oil Company in Calgary in May last?

MR. BLAIR: Yes, sir.

MR. PATTILLO: Now, as I understand it, your company has decided from its survey and study that the route suggested by Dutton-Williams in that report, of the line parallel to the Interprovincial line to Superior and thence in a straight line to the Sault and to Montreal, is the most economic route to follow if one is going to build an entirely new line?

MR. BLAIR: Yes. Our survey is based on our own data, that is our own examination. In general it is the same route.

MR. PATTILLO: The size of the pipe that you are suggesting, or one of the sizes at least, the 30-inch size, is the same size as Dutton-Williams in that report suggested.

MR. BLAIR: Yes, that is right.

MR. PATTILLO: Now, I think that it would be of real assistance to this Commission if we could



look at that study of Dutton-Williams and compare it to your study of the same or a similar route and see wherein the differences lie. You come up with a tariff of 74 point some cents, and what they said was a suggested tariff, I think, of 54 cents. First of all, as I understand it, your calculations as to the cost of the project, the capital cost, do not vary greatly from the figures that Dutton-Williams came up with. Is that correct?

MR. BLAIR: I believe that is correct.

MR. PATTILLO: Can you tell me from your study what is the difference?

MR. BLAIR: In capital cost?

MR. PATTILLO: Yes.

MR. BLAIR: I believe, in comparing the two there are pluses and minuses that correspond to the different variables but that the actual difference in capital cost is negligible.

MR. PATTILLO: You would say it is in the difference you might reasonably expect from two competent groups bidding on a job?

MR. BLAIR: Yes.

MR. PATTILLO: And estimating what it would cost?

MR. BLAIR: Yes.

MR. PATTILLO: Now then, let us see wherein the differences lie as to the approach to operating revenue needed. You advised that the capital would



be obtained by borrowing 75 per cent and by having an equity investment of 25 per cent?

MR. BLAIR: That is correct.

MR. PATTILLO: Whereas I think Dutton-Williams used an 85 per cent borrowing and a 15 per cent equity?

MR. BLAIR: I believe that is so.

MR. PATTILLO: Would you explain why you people, in using your best judgment, preferred to approach it from 75/25 rather than 85/15?

MR. BLAIR: The 75/25 that we have used is following the history, the pattern, that is common to Canadian pipelines of this type. Would you like Mr. Bridges to amplify that, if he would?

MR. BRIDGES: I think that what you said is correct as to the reason why we used 75/25. It is obvious that in financing it is possible to have a greater amount of equity or a lesser amount, depending upon how the underwriters believe they will be able to sell the issue. In our case, we thought that the more normal, the more usual, ratio was 75/25, and that is the ratio which we have normally used in making similar studies.

MR. PATTILLO: Right. Then I am right in thinking that you envisage that this line and any similar line can only be expected to work, looking at it practically, at 85 per cent efficiency rather than 100 per cent?



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MR. BLAIR: 85 per cent load factor.

MR. PATTILLO: 85 per cent load factor?

MR. BLAIR: That is correct. That is our best judgment of what might be expected of a line of that kind.

MR. PATTILLO: Whereas in the Dutton-Williams figures the figure of 100 per cent for theoretical load factor was used?

MR. BLAIR: That is correct. Possibly I could amplify that a little, if it would be of help, in this way. Our data refer to

cost of service. It is not intended to be read as tariff. It is a cost of service. Secondly, as I understand the Dutton-Williams report, there it is also one of transport costs, again not a tariff. Now, it is our judgment that, in arriving at cost of service, provision must be made for the load factor on the line and, as I mentioned, it is our best judgment that that should be 85 per cent, and that provision should also be made, or must also be made, to make it realistic, for the interest on the investment, the return on the investment.



If I may just possibly help, just to give an illustration, as mentioned in the covering letter the difference at this throughput between the load factor of 85 per cent and 100 per cent is some 10 cents per barrel and the dropping off of interest from 5 per cent to 3 per cent is 7 cents for each one, that is 14 cents so there is a total difference accounted for there of 24 cents. I would also like to add, if I may, just to make a correlation of the two reports more clear that in the Dutton-Williams report they mention in arriving at a tariff certain other factors which should be taken into account, they have not been up to that point in arriving at their figure but in this they mention load factor and other usual operating conditions.

MR. PATTILLO: Well now, may I just continue on a little further trying to reduce both approaches to a common denominator if I can. Did you find in working out your estimate as to operation costs that there was any great discrepancy between the figures that you came up with and the figures that Dutton-Williams came up with? I am looking at your page 7 of your report and I have dealt now with the two items, Nos. 1 and 2 and I am proposing to try and go down this so we will have them.

MR. BLAIR: My associate just pointed



out in our report we used 2.11 per cent of the cost of the plant whereas in the Dutton-Williams report they use 1.36 per cent.

MR. PATTILLO: Now, would you or your associate care to develop why you prefer one figure to the other?

MR. LYNCH: I think, first of all, so I am sure, you are referring to item 3(a), Operation?

MR. PATTILLO: That is right.

MR. LYNCH: And we find Operation on page 7 expressing our total costs estimate we express it as a percent of the total cost of the plant, that is equal to approximately 2.1 percent. In our reconciliation with the Dutton-Williams report expressing their total estimate of cost of operation as a percent to their total cost it is 1.3 percent.

MR. PATTILLO: Well now, can you explain to me where the difference arises, in the base or where does the difference arise?

MR. LYNCH: I think it lies in their estimate of the cost of maintaining the pipeline. I do not know the basis for their estimate but it lies in the cost of the maintenance of the pipeline, that is pipeline control and repairs and I believe our costs on the operation of pumping stations are essentially equal.

MR. PATTILLO: So when you are talking about maintenance of the pipeline you are talking



about airway patrols, the ground patrols and that sort of thing?

MR. LYNCH: Yes, and I am continuing, if I may, the cost of administration and overhead, that is main office, the division office of the pipeline. I daresay there could be considerable difference in the estimate of cost in performing that work.

MR. PATTILLO: And can you help us there, are your figures or estimates on that based on your actual experience as to what it costs to operate lines of this nature in Canada?

MR. LYNCH: It is not based on -- it is our knowledge of the costs, we do not operate a pipeline.

MR. PATTILLO: No, I know you do not but you do have ways of finding out?

MR. LYNCH: Oh, yes.

MR. PATTILLO: Now, is there anything further you would like to say about the difference in the approach to the operation figures?

MR. LYNCH: No, I think that covers it.

MR. PATTILLO: Now, may I direct you to the item of depreciation: I see that you do employ the straight line method at an annual rate of 3 1/2 per cent and how does that compare with the method Dutton-Williams were using?

MR. BLAIR: I would ask Mr. Bridges to talk



about depreciation.

MR. BRIDGES: I do not know about Dutton-Williams.

MR. BLAIR: Well, would you explain depreciation?

MR. BRIDGES: I understand they likewise used the same rate of depreciation, however I gather they use some accelerated depreciation including income tax and our computation we used some big figure without income tax.

MR. PATTILLO: I was going to come to that later, but I am glad to have that distinction. So, in effect and by the computation of the accelerated depreciation in the early days they would have to have for book purposes to bring this into comparable position with that they would have to use deferred income tax to really bring the picture in the same light as yours?

MR. BRIDGES: That is right. If we were operating a pipeline we would do it that way but in presenting a yardstick we give the figure as we have.

MR. PATTILLO: Now, let us look at the amortization and the financing expenses, I see you have employed the straight line method again at 4 per cent, what approach did Dutton-Williams have?

MR. LYNCH: To the best of my knowledge of their figures they used the same.



MR. PATTILLO: The same?

MR. LYNCH: Yes.

MR. PATTILLO: In the matter of interest you computed at the rate of 5 per cent on the funded debt and what did they use?

MR. LYNCH: They used the annual rate of interest $5 \frac{1}{4}$ per cent of 85 per cent of the cost of the plant.

MR. PATTILLO: I am not sure I clearly understood you at the last.

MR. LYNCH: $5 \frac{1}{4}$ per cent, that is their rate of interest on the funded debt.

MR. PATTILLO: That would be $5 \frac{1}{4}$ per cent of 85 per cent of the capital cost as opposed to your 5 per cent on 75 per cent?

MR. LYNCH: That is right.

MR. PATTILLO: General taxes, you make an assumption as 1 per cent of the capital investment would cover that, did Dutton-Williams make a similar assumption?

MR. LYNCH: They made a similar assumption.

MR. PATTILLO: Then, I come to the question of income tax, did they make the same assumption that you made, namely that there be no U.S. income tax because of the fact it is going through in bond and the rate of per cent would be 47 per cent.



MR. LYNCH: I am not quite sure exactly that I followed their calculations as I studied their report, but I believe it is the income tax for the operations in the United States on the basis of 52 per cent United States tax plus a tax to the states through which they pass.

MR. PATTILLO: So there is a differential between you and them on that item?

MR. LYNCH: Yes. I would like to make clear a point. Maybe it is a definition of a term, but we pay Canadian tax on all of the taxable income of the system. We pay no tax in the United States.

MR. PATTILLO: This net income, as I understand it, you have based this on a return of 5 per cent on cost of plant. Let me see that I clearly follow this thing. When you have found out from the previous calculation what your gross income is going to be -- not your gross income but what your cost of the plant is going to be, and then you have found out what your items of expense are going to be, you have said, "All right, on top of those we assume that the equity holders should receive a return of 5 per cent on the plant, by way of net income"?

MR. BRIDGES: That is what the Corporation itself should receive, 5 per cent of the plant, which it would use for expansion purposes.



MR. PATTILLO: So if I want to find out what gross revenue I need to have, I take my expenses which are listed under item 3 down to item (g) and then I take 5 per cent of my investment, add the two together, and say now I have got to get that annual revenue?

MR. BRIDGES: Not quite. You take it down to (e) and you find what you would need after (e), and then add your 5 per cent to give you that figure.

MR. PATTILLO: What corresponding item did Dutton-Williams use there?

MR. BLAIR: We think it was on the same basis, but it was 3 per cent instead of 5 per cent.

MR. PATTILLO: And that is where you make your comparison of the 14 cents?

MR. BLAIR: That is correct.

MR. PATTILLO: Now, I think that enables us to compare the two reports of that 30-inch line through the Sault.

Now, can I ask you a few questions about your approach to the expansion of the Interprovincial line? As I follow it, you reached the conclusion that, as an approach on pure economics, the cheapest method to employ would be to expand the Interprovincial line?

MR. BLAIR: For the present, at least, and through the range that we have used in our ---



MR. PATTILLO: Which is up to 300,000 barrels a day into Montreal?

MR. BLAIR: That is correct.

MR. PATTILLO: Now, can you give me any idea as to what requirement there would have to be for the Montreal market before that differential in favour of expansion of the Interprovincial line would cease to exist?

MR. BRIDGES: At volumes in excess of 250,000 barrels, the cost of the two lines is very close. At some point -- and this would involve the question where new looping came in -- it is very likely that the 30-inch line might be lower than the expanded Interprovincial system. A little further on it may be that the lines would again cross, but for all practical purposes it is our opinion that for 300,000 barrels and over they are of the same order and magnitude.

MR. PATTILLO: Let me ask you this question: From your studies of this whole problem, as I understand it, if you owned all the refineries in Montreal and you were faced with the problem of bringing oil from Edmonton to Montreal and you wanted to do it at the least cost, which method would you employ?

MR. BRIDGES: If I were faced with the problem today or within the foreseeable future, I would use the expanded Interprovincial system. If,



at some time in the future, the problem arose and the volume to the Montreal market was substantially higher than it is now, it would be a very close choice and would require to be studied at that time.

MR. PATTILLO: But if you **were** trying to make a decision in the next six months as to which way you were going to proceed, as I understand it, you would proceed by way ---

MR. BRIDGES: I should qualify what I said. If I were looking solely at the most economical way of transporting the oil, possibly there are factors which would come into it -- Interprovincial would agree, and things of that nature.

MR. PATTILLO: I am looking at it from the cheapest method.

MR. BRIDGES: Yes.

MR. PATTILLO: Now, when you are looking at the figures you have come up with here for the expanded Interprovincial system, are we able to make the same deductions there, that is the 10 cents and the 14 cents, as you make when you are considering the entire new line?

MR. BRIDGES: The answer is Yes, but they would not be exactly the same amounts. The money is less, so instead of being 10 cents it may be 9-plus cents, but the same principle is applied.



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7419

MR. PATTILLO: Now, Mr. Blair, would someone in your group answer this for me. Your studies are based on the 30-inch line, and Dutton-Williams have come in recently, as you know, proposing that there be a 36-inch line to Superior and the 34-inch line from there to Montreal.

Now, first of all, do you know whether the steel mills in Canada at the present time can roll the necessary steel for a pipe of a diameter greater than 30-inch?



MR. BLAIR: It is my belief they are not in a position to roll at present but they could be fully equipped.

MR. PATTILLO: At the present time they are equipped to roll 30?

MR. BLAIR: 30-inch. Might I just check that question? Just to complete the statement, Mr. Pattillo, if they had the plate they are apparently in a position to make the 36-inch. Up until now the mill is not in a position to roll the plate of adequate width to make that pipe.

MR. PATTILLO: The pipe mills can make 36-inch but they cannot get the necessary steel.

MR. BLAIR: The necessary plate to roll.

MR. PATTILLO: Now the next thing what is the advantage or disadvantage of putting the larger diameter pipe? Let us assume that we were going to build an entirely new line and that we were going to follow the route that you say is the most economic, and that Dutton-Williams also says is most economic. What is the advantage or disadvantage of using 30-inch as opposed to the sizes which they now recommend of 36-inch and 34-inch?

MR. BLAIR: In our study we have considered quite a wide range of pipe sizes and in the study concluded relatively high throughputs. We felt thought that this report to the Commission



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would be most realistic if we kept it in the same order of throughput as seemed possible for the Montreal market to absorb at this time. For that throughput the most economic pipe size diameter is 30-inches.

MR. PATTILLO: In other words, if you want to operate your line with the greatest maximum efficiency you want to have 85 per cent load in there and that is about what you figure you could get with the 30-inch. If you had a bigger line you would have a lot of unused capacity. Is that right?

MR. BLAIR: The difficulty in obtaining a load factor is these other variables, those that take place both in the steel, gathering and batching, etc., and those that take place in the refinery in getting continuous operation. There are difficulties there and the history of pipelines carrying a service similar to this is that they have loads to the 85 per cent load factor.

MR. PATTILLO: What I am trying to get at is: if you built the larger line you would have a period where you had unused capacity of the line for a substantial time?

MR. BLAIR: That is correct.

MR. PATTILLO: And you would be getting no return from it.

MR. BLAIR: That is correct.



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MR. PATTILLO: Is it more desirable in your experience to build a line that in the first instance is closer to the demand that you may have for use of it and then, as the demand grows, increase your line by pumping and that sort of thing and take care of it? Is that a more economic way than the idea of estimating far into the future as to what the possible demand will be and then building your line once and for all to take care of that?

MR. BLAIR: I think the major factors in arriving at such a determination are the approximate size of the market at the inception and the rate of growth that is anticipated thereafter. If there appears to be a likely big increase in requirements we would design for a bigger line initially so long as we are not going to carry a lot of vacant capacity over the time.

MR. PATTILLO: Now then, your estimate as to the cost of service are based on the first year of operation. As you have explained to us the factors that go into that figure as to the amount of annual revenue you need, because your interests requirements would be dropping, would be the highest the very first year of the life of the scheme. Your annual income requirements to continue to maintain the five per cent return would be dropping each year; would they



not?

MR. BLAIR: Only by the amount of interest payment which is relatively small.

MR. BRIDGES: We have estimated a return of 5 per cent on the original costs, and the original cost remains the same. The fact you said it would change would be the interest. As soon as there is reducing interest there would be reduction in operating costs resulting in transportation costs.

MR. PATTILLO: If one is looking at it, if one tried to do as Dutton-Williams did in theirs, saying: "Here is the average for five years. This is based on the fifth year: "- - if you approach it from that point of view you would come up with an entirely different figure than the figure we have in here.

MR. BRIDGES: Come up with a different figure. It would not be necessarily an entirely different figure. As Mr. Blair explained on this curve each point is the most efficient pipe line to deliver that amount of oil. If we were designing a pipe line which ultimately, let us say, in three years, or five years, would deliver 255,000 barrels average per day we would adopt the 30-inch pipe-line. The results would be in the early years the cost of transportation per barrel would be high as you started in the minimum throughput and would decrease as the throughput went up. The



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lesser interest paid would be very minor.

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300 debt - $\frac{1}{2}$
(100) quantity

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MR. PATTILLO: I think I understand.

THE CHAIRMAN: While you are on that point -- and I hope this does not interfere with your train of thought -- I would like to ask Mr. Blair a question on the financial end.

You speak of a 5 per cent return of cost of the plant. I assume from your figures -- I want to get this straight in my mind -- I assume from your figures that if the cost is \$400 million, taking round figures, the 75 per cent and the 25 per cent equity gives you \$380 million; so you get down to \$100 million equity?

MR. BLAIR: Yes.

THE CHAIRMAN: And if you take a return of 5 per cent on the total cost of plant of \$400 million that gives you \$20 million, which gives you 20 per cent on your equity after taxes?

MR. BLAIR: That is correct.

THE CHAIRMAN: Is that correct?

MR. BLAIR: Yes.

THE CHAIRMAN: Did I understand that correctly?

MR. BLAIR: Yes.

THE CHAIRMAN: All right.

MR. PATTILLO: I think, from what we got, Mr. Chairman, from Interprovincial when they were in Calgary, that is very much in line with the actual return that they earned?



MR. BLAIR: If Mr. Lynch were to give some returns at this point.

MR. LYNCH: We have analysed certain crude oil transportation systems in the United States, which were presented at an Interstate Commerce Commission hearing, and those statistics were compiled from their reports, published in 1957, which cover the operating year of 1956; and the per cent of net income in relation to the original cost of their plants of the following pipe lines are:

| | |
|------------------------------------|--------|
| Interstate Oil Pipeline Company | - 6.7% |
| The Lakehead Pipeline Company | - 4.6% |
| The Mid-Valley Pipeline Company | - 6.5% |
| The Platte Pipeline Company | - 5.8% |
| The Portland Pipe Line Corporation | - 6.8% |
| West Texas Gulf Pipeline Co. | - 6.5% |

Now, the average of all those pipeline companies reporting to the Interstate Commerce Commission, representing approximately 143,000 miles of pipe line, averaged 6.6 per cent.

THE CHAIRMAN: Perhaps, however, there is the distinction in this instance that we have been told, as a Commission, that you can't move oil from Western Canada to Montreal without some kind of government embargo, or quota system, and throughput agreements guaranteed by all the



refiners in Montreal, which gives it a complete monopoly of the Montreal market, and 250,000 barrels a day assured -- would you think that a 20 per cent return on the equity, or 5 per cent on the cost of plant, even although it is a little lower than those American companies, could be justified?

MR. BRIDGES: In making economic feasibility reports we have, in practice, felt that if the figure showed a 5 per cent return on original cost of plant and if the owner is satisfied that the revenues would be there to pay off the yield, the line is economically feasible.

THE CHAIRMAN: It seems to me that a line is more than economically feasible under these conditions.

MR. BRIDGES: Let us assume -- I don't want to argue the point -- but if there are governing guarantees of throughput and if the equity-holder were assured that, under no circumstances, could those guarantees be changed I think you are quite correct; and that if the income, or guarantees, would continue for the entire period, beyond peradventure, I think it would be fair to get in both the senior money and the equity. We understand from those who are making economic reports that, historically, a return of this order has been necessary to justify getting the equity.

THE CHAIRMAN: Thank you.



MR. PATTILLO: I don't think I have any further questions.

THE CHAIRMAN: I hope I didn't interrupt your train of thought.

MR. PATTILLO: No; I was just coming to an end.

THE CHAIRMAN: Mr. Frawley?

MR. FRAWLEY: But, Mr. Blair, following up what the Chairman was discussing with you, this isn't going to be that kind of pipe line. If the Federal Government of Canada put a quota against foreign oil coming into the Montreal market that will immediately, and automatically, assure the success of the pipe line, will it not?

MR. BLAIR: May I commence to answer that by saying that we have made this whole study as a normal, commercial development.

Now, the question of embargoes or quotas is something which, frankly, I am not at all familiar with -- as to the security which is given to those who advance the money for that length of time that the thing stays in force. I am not . . .

THE CHAIRMAN: I don't think you should be called upon to give your opinion as to the financial success of a line under those conditions.

MR. BLAIR: Thank you.

MR. FRAWLEY: No, Mr. Blair; I am quite



sure that when you make the study on any subject it is very thoroughly done. I want to be clear that you were not taking into account -- that you didn't feel that you were taking into account the fact that this would be, as some people have called it in these proceedings, a combative market to this pipe line.

MR. BLAIR: No; this is a straightforward commercial development.

MR. FRAWLEY: And it is because of that that you have come out with the 20 per cent on the equity investment?

MR. BLAIR: Because the history of pipe lines is of the order of the conditions we have defined in our report.

MR. FRAWLEY: In Calgary we were told that there were certain very well known economies in large diameter pipe line, and you would subscribe to that as a general proposition?

MR. BLAIR: That is correct; when they are all operating.

MR. FRAWLEY: If -- and this is just a truism -- if you had, in your calculations, built a 34- and 36-inch pipe line you would have come out with a different unit cost?

MR. BLAIR: Not against the throughput that we envisage by pushing up into the Montreal market at this time. That is why we took



that figure.

MR. FRAWLEY: Could you tell me what the figure is again? Would you tell it to me?

MR. BLAIR: Two hundred and fifty-five thousand barrels a day.

MR. FRAWLEY: And where did you get that figure?

THE CHAIRMAN: My recollection is that when the Commission asked you if you would be good enough to make a submission we asked you to base it on that figure.

MR. BLAIR: Yes; and it also conforms with the Montreal market at this time.

MR. FRAWLEY: That is, 100 per cent of the Montreal market is about of that order?

MR. BLAIR: Is of that order.

Just to make that point clear, that is the refining capacity I am talking about, of the Montreal market.

MR. FRAWLEY: The refining capacity of the Montreal market?

MR. BLAIR: Yes.

MR. FRAWLEY: And if you include . . .

MR. BLAIR: I don't know what may lie beyond that. We were taking the refinery capacity there and what the market might be.

MR. FRAWLEY: Tell me this -- it might be a good idea to put it into the record -- have



you the figures of the breakdown of the 255,000?

MR. BLAIR: The breakdown of the 255,000?

MR. FRAWLEY: Or the make-up?

MR. BLAIR: No. We have reached this figure by taking the records of those refineries, and we found that this was, in our opinion, a reasonable and proper amount to use to supply the maximum they have elected to take at this time; so we haven't got the make-up.

MR. FRAWLEY: Well, now, I am not questioning it for a moment, but I want to have this clear on the record: Did you take into account British Petroleum?

MR. BLAIR: We considered all the refineries there, and -- yes, we considered all the refineries there and the likely extension.

I don't want to go into the whole details and maybe I can make my point this way that, in considering the refinery's capacity in a given area to meet the objectives it means a really thorough study, and consideration has to be given to each of the refining areas and to the type of refinery that is in it and the different type of crude they may require; and without going into what each company's forward programme was we felt that it would be much better to take the total which they would be likely to attain, and it is that figure we have used.



MR. COMMISSIONER LADNER: Mr. Blair, your report, as you say, is based upon a throughput of 255,000 barrels per day, and on that basis, as was calculated, the route B, as you call it, the Interprovincial route, would be preferable, as your report states, but perhaps this is beyond the scope of your inquiry, although it should be considered, and that is supposing that this market for the next seven years to 1965, the refining capacity justified by the market there, grows from 255,000 to 400,000, then would it be better to have the route B, that is, the Interprovincial route, or the other route that we have been comparing it with?

MR. BLAIR: Our study has covered a wide range of throughputs and, as Mr. Bridges mentioned, up to something in the order of 300,000 barrels per day, the Interprovincial expanded system is the most economic. Beyond that these curves here, as you will notice, the bottom line is the Interprovincial system, and it is becoming parallel to the other curves, the optimum points on the other curves in that range. The consideration of points beyond that would require special study in each case. However, it does not follow that at any very greatly increased amount the Interprovincial might not well be the best. The two lines will cross each other several times.



MR. COMMISSIONER LADNER: Planning for an expanding program in the utilization of oil in Montreal over ten years' time, say, would you still recommend the Interprovincial or would you think that some other system should be established to take care of all possibilities of a ten-year expansion on the basis of what has happened in the last five years, say?

MR. BLAIR: You appreciate, sir, when we are making these remarks about Interprovincial, we are doing it entirely without their acquiescence?

MR. COMMISSIONER LADNER: I just used their name as being identified as Route B.

MR. BLAIR: That is right. We are simply using this as I said. But to try to answer your question, for the future, and recognizing the size of the market that is there now, it would be our opinion that, if oil was to be put into the Montreal market, the Interprovincial would be definitely the most economic. Perhaps Mr. Bridges would like to add to my statement.

MR. BRIDGES: In answering your question, I am assuming you are speaking of a pipeline built now or in the reasonably near future.

MR. COMMISSIONER LADNER: One that you build now but as a matter of prudence looking into the future, having regard to future expansion in refinery and marketing, a considerable expansion.



MR. BRIDGES: The reason why I asked the question was that if the construction of the pipeline was delayed -- the time between the construction of the pipeline and the realization of the higher volumes -- then we would not advise the building of the 30-inch line in the first place; we would probably advise the building of the 34-inch line. As you will see on the chart, the 34-inch line, when you get to the volume of 300,000 barrels, is still economic. If the pipeline were to be constructed in the near future, those volumes are quite unlikely to be realized for a number of years down the line. In the meantime you would have to be carrying the cost of financing the entire line, which would be much higher and would raise the current transportation costs to a point that would be much less economic than the current transportation costs on a smaller line. Therefore, in sizing the line to start with you look at your ultimate aim, and a very important factor is the function of timing, when you are going to get there. You cannot afford to spend money now that you would need ten years from now. It is better to build a smaller line and increase the capacity by looping at that time, but if you are starting all over again you would build that line.

MR. COMMISSIONER LADNER: Thank you very much.



MR. COMMISSIONER HARDY: On the last point, Mr. Bridges, I take it that if you take the 275,000 barrels per day you could put that 30-inch pipeline into operation and, carrying that much per day, that is 70 cents a barrel, and you could also put a 34-inch line into operation to carry that same amount for the same price? That is what the curve says.

MR. BRIDGES: That is right. If initially you carried that much -- I should reiterate that at any point on these curves it is the most economic line of the diameter mentioned, designed to carry that exact amount of volume.

MR. COMMISSIONER HARDY: The cost comes out the same per barrel for those two sizes at that throughput?

MR. BRIDGES: Right.

MR. COMMISSIONER HARDY: If you want to go to 350,000, you do that by additional pumping stations?

MR. BRIDGES: Not on the 34-inch line.

MR. COMMISSIONER HARDY: You cannot start with 275,000 barrels at 75 cents and then say you can increase the capacity of that to 350,000, and lower your unit cost?

MR. BRIDGES: No. I should explain that if you take your ultimate point, say 350,000 barrels, and you want to see the effect of that



particular line at any previous point, it would not be the curve we have here; it would be the curve of a line designed to reach that ultimate volume. But the cost would be somewhat more than at this particular point at a lesser volume. This is for yardstick purposes.

MR. COMMISSIONER HARDY: I do not see how you could do that. You build a 34-inch line for 270,000 barrels a day, and you have so many pumping stations?

MR. BRIDGES: Correct.

MR. COMMISSIONER HARDY: The only way you could increase that is by having more pumping stations?

MR. BRIDGES: That is right.

MR. COMMISSIONER HARDY: Then you are no longer using a 34-inch line?

MR. BRIDGES: Yes. You would increase it by pumping stations. All I was saying is that one should not confuse the cross line of a pipeline designed for a certain capacity from the start through smaller volumes until it goes to a larger volume on this curve.

MR. COMMISSIONER HARDY: I cannot see how it means anything else other than a variation in cost of pumping facilities along the line.

MR. WASTE: I think I can explain. Those curves do not represent any pipeline. When you



look at it for, say, 100,000 barrels, it is the ideal pipeline of that particular diameter to supply 100,000 barrels. When you get to 200,000 barrels, it is the ideal pipeline of that diameter to carry 200,000 barrels. More pumping stations would not necessarily do it. It is a matter of wall thickness and other things.

MR. COMMISSIONER HARDY: I see.

On a more general point, Mr. Blair, I think you recognized from discussions that we had in Calgary that we perhaps are dealing with a little different type of problem here in Canada on these pipeline propositions than in most places. I recognize your approach here, and you have explained it very nicely in the letter. Yet we have a transportation problem, and we are trying to serve a market that most people are saying is not an economic market, and that was one of the reasons for this pipeline study. Do you know of any place elsewhere in the world where a similar situation exists, where you have a fictitious market created by regulation, as it were, or national boundaries in which the whole problem is one of transportation?



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MR. BRIDGES: We do not know of any where the decision to build a pipeline has not been left to industry alone without Government intervention except as to the order. To give an illustration, oil has been discovered in the Sahara region of Algeria and the French refiners will have to use that before they are allowed to import oil so it will go through. In designing a pipe line to bring it from the scene of the Sahara to the Mediterranean, it could go no place else so that was a problem in making the study as to where the line should be built and what it would cost. That was on the same basis as we made this study. You will see this problem is quite different because refiners themselves would bring the oil into France and only to that source. Coincidentally the fact was that the oil could go nowhere else, fortunately it was economic and even if there had not been Government intervention the pipe line would have been justified.

MR. COMMISSIONER HARDY: It is too bad you added that last because that is what Mr. Frawley asked.

MR. FRAWLEY: I am sorry, would you repeat that again?

MR. BRIDGES: I said fortunately in that case had the oil gone into the World market it would have been entirely economic to build a pipe line.



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MR. COMMISSIONER HARDY: My understanding of the first point was that this pipe line was built, that they had a supply of oil and have a market and they built a pipe line and it happened, by coincidence, to be economical.

MR. BRIDGES: Until things quieten down it won't be available.

MR. COMMISSIONER HARDY: So in your experience of all these big pipe lines that have been built, the analysis have been on the basis of what you have here?

MR. BRIDGES: Within reasonable limits, yes.

MR. COMMISSIONER HARDY: And I suppose the arranging of financing of Trans-Canada would constitute a definite variation from normal as far as you are concerned?

MR. BRIDGES: I think those who arranged the financing of Trans-Canada did a remarkable job.

MR. COMMISSIONER HARDY: I think that is all I have to ask.

THE CHAIRMAN: Just before we close the record, I am not sure about this tax situation; your brief, Mr. Blair, brings this line through part of the United States and you say there would be no Income Tax paid in the United States.

MR. BLAIR: If the oil was in bond and we assume it was in bond because there are no



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deliveries in the United States.

THE CHAIRMAN: Which pipe line does it go through in the United States?

MR. BLAIR: Excuse me, Mr. Bridges draws my attention to the fact that the result is only a variation between 47 per cent and 52 per cent.

THE CHAIRMAN: That is not my question, my question is, are you positive that oil moving in bond through a pipe line owned by an extra-provincial corporation in the United States would not be subjected to income or other tax by reason of the tariff on that portion of the line going through that State or country.

MR. BLAIR: Could I check that?

MR. BRIDGES: The answer is, we are not certain. There may be an allocation required so the answer is we are not absolutely certain.

THE CHAIRMAN: Do you not think that chances are that such a company would have to pay a tax on a profit made on the oil in bond?

MR. BRIDGES: I cannot help agreeing with you only, I understand on the existing situation there is a possibility of that result being realized.

THE CHAIRMAN: You have no definite information.

Mr. Blair, thank you and your colleagues very much for the help you have given us. I know we were late in asking you to be kind enough to turn



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your organization inside out and give this submission to the Commission, but it was not until we got through with our Calgary hearings that we realized the vital importance of such a submission to the Commission. We are grateful to you and to all of your colleagues for the great help this submission will be.

MR. BLAIR: We are very pleased to have done it and we hope it will be of some help.

THE CHAIRMAN: It undoubtedly will be and I deeply appreciate the co-operation of your whole organization.

This is the close of our hearings in Toronto and we will resume our hearings in Montreal at ten o'clock next Monday morning in the International Civil Air Organization building on the tenth floor.

Before adjourning I do wish to, on behalf of the Commission, express our appreciation and gratitude to all those organizations who have come before us and willingly co-operated and given testimony during our hearings here in Toronto.

I also wish to thank the University of Toronto and the staff of the University for permitting us to use this Senate Chamber and for the kindness in many ways and complete co-operation in assisting us in the work of the Commission.

Lastly, but not least, I would thank



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Counsel and particularly Counsel for the Province
of Alberta, Mr. Frawley.

Thank you, gentlemen, the hearings of
the Commission will be adjourned until Monday morning
next in Montreal.

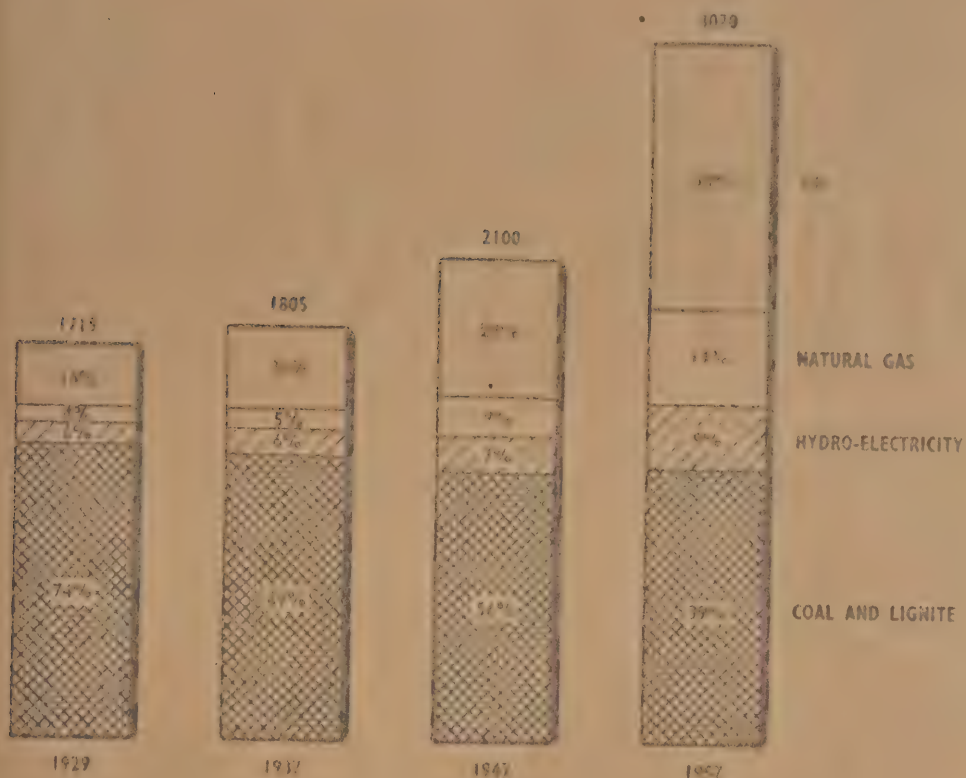
--- Whereupon the hearing adjourned at 3.25 p.m., to
be resumed, in Montreal, Province of Quebec, at
10.00 a.m., Monday, July 14th, 1958.

- - - - -

WORLD ENERGY DEMAND, 1923-1957

(Excluding U.S.S.R. and Associated Countries)

QUANTITIES IN MILLION LONG TONS, HARD COAL EQUIVALENT
ONLY COMMERCIAL SOURCES OF ENERGY INCLUDED



WORLD OIL PRODUCTION BY MAIN AREAS, 1927-1957

(Excluding U.S.S.R. and Associated Countries)

QUANTITIES IN THOUSAND BARRELS PER DAY

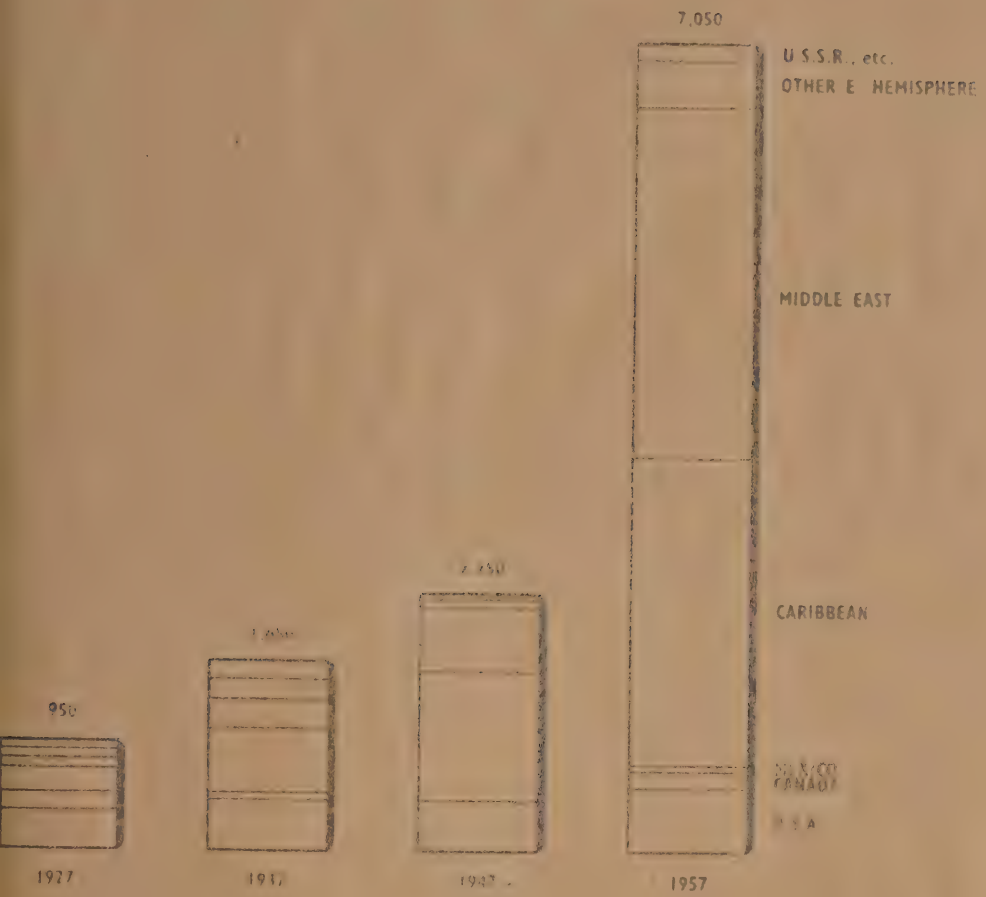


WORLD OIL PRODUCTION BY COUNTRIES, 1957



WORLD OIL EXPORTS BY ORIGIN, 1927-1957

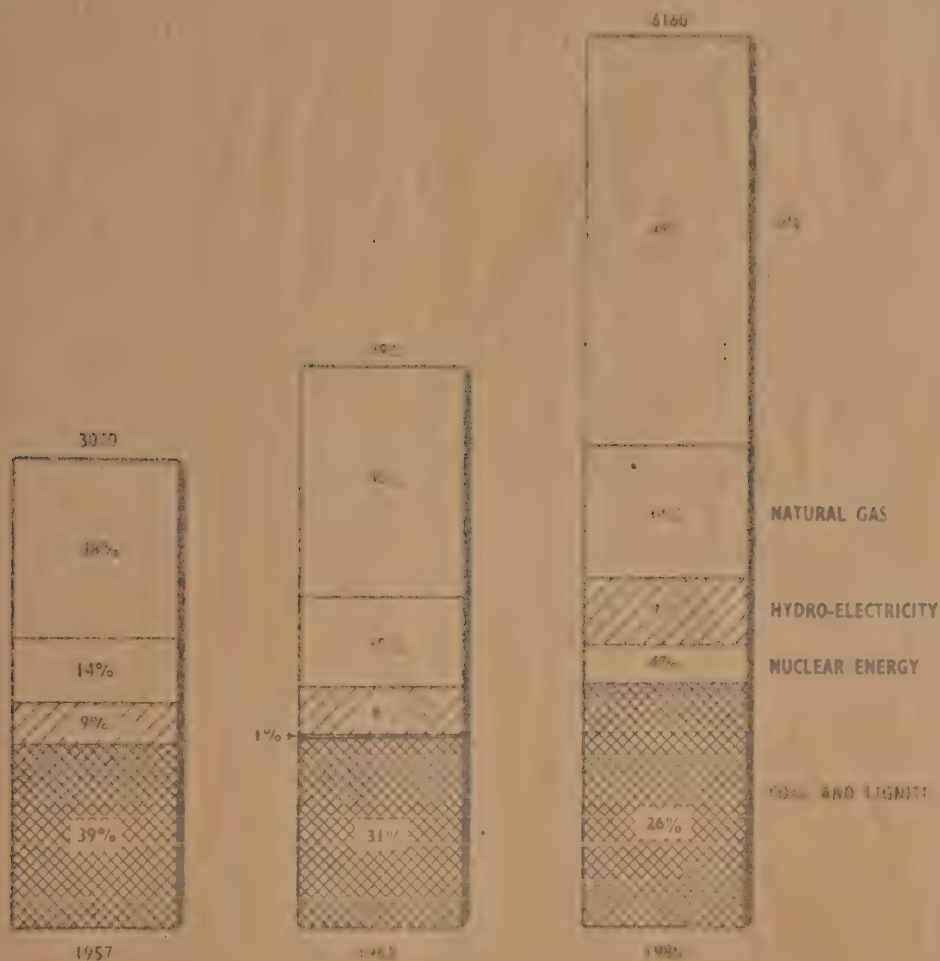
QUANTITIES IN THOUSAND BARRELS PER DAY



WORLD ENERGY DEMAND—1957 AND ESTIMATES FOR 1985 & 1990

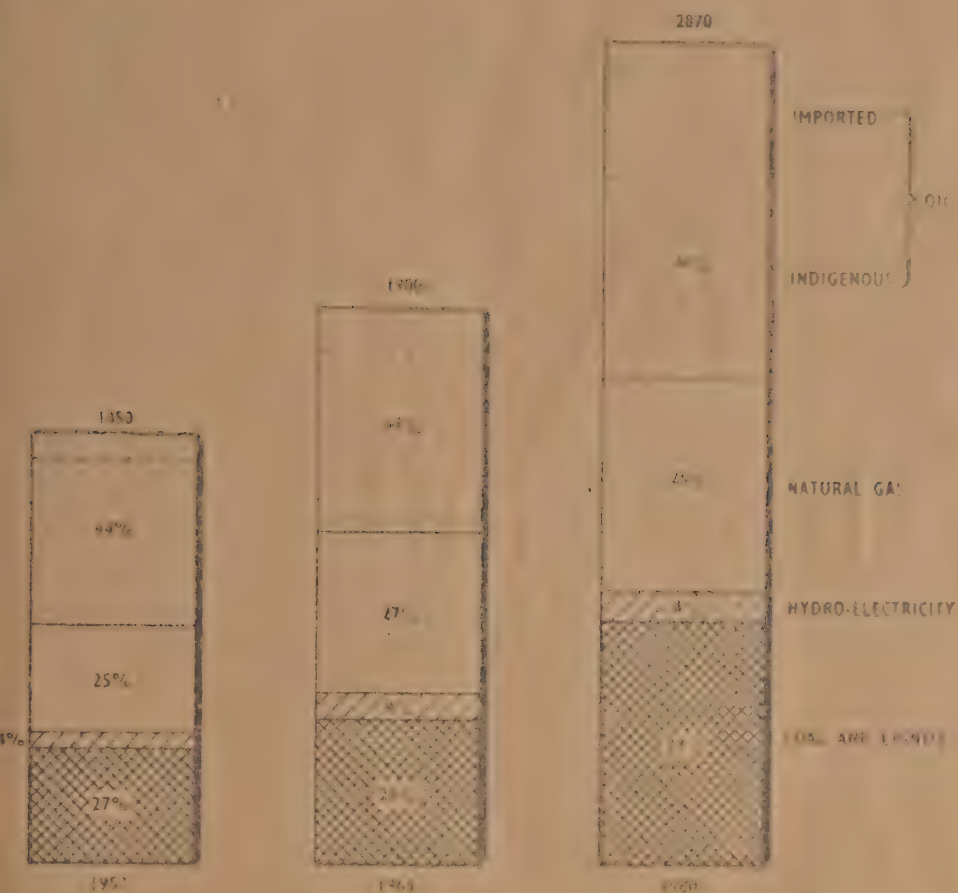
(Excluding U.S.S.R. and Associated Countries)

QUANTITIES IN MILLION LONG TONS, HARD COAL EQUIVALENT
ONLY COMMERCIAL SOURCES OF ENERGY INCLUDED



U.S.A. ENERGY DEMAND - 1957 AND ESTIMATES FOR 1965 & 1980

QUANTITIES IN MILLION LONG TONS, HARD COAL EQUIVALENT



IT IS ASSUMED THAT ANY DEVELOPMENT OF NUCLEAR POWER BY 1980
WOULD PROBABLY REDUCE THE COAL REQUIREMENT

WORLD OIL PRODUCTION 1957 and 1956

THOUSAND BARRELS PER DAY

| WESTERN HEMISPHERE | | | EASTERN HEMISPHERE | | |
|---------------------------|--------|--------|--------------------------|-------|-------|
| | 1957 | 1956 | | 1957 | 1956 |
| U.S.A. | | | MIDDLE EAST | | |
| Crude Oil | 7,175 | 7,141 | Bahrein | 32 | 41 |
| Natural Gasoline | 806 | 808 | Iran | 716 | 745 |
| Total | 7,981 | 7,949 | Iraq | | |
| CARIBBEAN | | | Kirkuk/Mosul | 258 | 466 |
| Venezuela | 2,790 | 2,433 | Basrah | 196 | 173 |
| Colombia | 122 | 115 | Khanaquin | 4 | 4 |
| Trinidad | 94 | 96 | Total Iraq | 458 | 639 |
| Total | 2,996 | 2,643 | Egypt | 1,140 | 1,200 |
| CANADA | 498 | 455 | Neutral Zone | 62 | 56 |
| MEXICO | 240 | 157 | Qatar | 140 | 135 |
| ARGENTINA | 92 | 73 | Saudi Arabia | 302 | 304 |
| PERU | 51 | 30 | Total Middle East | 3,534 | 3,544 |
| OTHERS | 57 | 39 | WESTERN EUROPE | 250 | 260 |
| TOTAL WESTERN HEMISPHERE | 11,027 | 11,461 | EAST INDIES | 43 | 50 |
| | | | U.S.S.R. | 1,975 | 1,863 |
| | | | EASTERN EUROPE, ETC. | 231 | 234 |
| | | | CHINA | 31 | 15 |
| | | | OTHERS | 74 | 60 |
| | | | TOTAL EASTERN HEMISPHERE | 6,541 | 6,635 |
| TOTAL WORLD 1957 — 18,468 | | | | | |
| TOTAL WORLD 1956 — 17,516 | | | | | |

PRODUCTION BY MAIN AREAS 1933 and 1957

THOUSAND BARRELS PER DAY

| | U.S.A. | CARIB-BEAN | MIDDLE EAST | EAST INDIES | U.S.S.R. | CANADA | WORLD |
|------------------|--------|------------|-------------|-------------|----------|--------|--------|
| 1933 | 3,327 | 624 | 32 | 177 | 154 | 0 | 4,294 |
| 1946 | 5,073 | 1,189 | 580 | 41 | 492 | 21 | 7,396 |
| 1947 | 5,432 | 1,215 | 800 | 54 | 534 | 23 | 8,058 |
| 1948 | 5,922 | 1,463 | 1,142 | 743 | 597 | 34 | 9,466 |
| 1949 | 5,477 | 1,459 | 1,351 | 192 | 651 | 59 | 9,336 |
| 1950 | 5,306 | 1,648 | 1,796 | 222 | 729 | 80 | 10,489 |
| 1951 | 6,720 | 1,867 | 1,900 | 261 | 781 | 159 | 11,750 |
| 1952 | 6,968 | 2,573 | 2,096 | 231 | 883 | 103 | 12,854 |
| 1953 | 7,113 | 2,736 | 2,424 | 313 | 985 | 222 | 13,970 |
| 1954 | 7,335 | 2,657 | 2,748 | 323 | 1,146 | 265 | 14,474 |
| 1955 | 7,579 | 2,344 | 3,243 | 353 | 1,200 | 305 | 14,974 |
| 1956 | 7,950 | 2,644 | 3,333 | 399 | 1,200 | 376 | 15,416 |
| Year 1957 | 7,981 | 2,996 | 3,331 | 431 | 1,975 | 400 | 16,116 |
| Jan. - June 1957 | 6,312 | 2,113 | 1,157 | 19 | 1,514 | 50 | 11,145 |
| July - Dec 1957 | 7,656 | 2,783 | 3,074 | 358 | 2,165 | 171 | 16,079 |

PROVED^a OIL RESERVES AS AT END 1957 and 1956^b

MILLION BARRELS

| | | EASTERN HEMISPHERE | | | |
|----------------------------|--------|--------------------|--------------------------|---------|---------|
| | 1957 | 1956 | | 1957 | 1956 |
| U.S.A. | | | MIDDLE EAST | | |
| Crude Oil | 30,435 | 30,435 | Iran | 32,000 | 30,000 |
| Natural Gas Liquids | 5,903 | 5,903 | Iraq | 25,000 | 22,000 |
| | | | Kuwait | 60,000 | 50,000 |
| | 36,338 | 36,338 | Neutral Zone | 5,000 | 650 |
| | | | Qatar | 1,750 | 1,500 |
| CARIBBEAN | | | Saudi Arabia | 45,000 | 40,000 |
| Venezuela | 13,200 | 13,200 | Southern Arabia | 500 | — |
| Colombia | 650 | 650 | Other Middle East | 251 | 255 |
| Trinidad | 100 | 100 | Total | 169,501 | 144,405 |
| | 14,135 | 14,135 | | | |
| CANADA | | | WESTERN EUROPE | 1,369 | 1,370 |
| Crude Oil | 2,849 | 2,849 | EAST INDIES | 8,087 | 5,650 |
| Natural Gas Liquids | 280 | 280 | OTHER FAR EAST | 493 | 490 |
| | 3,129 | 3,129 | U.S.S.R. | 24,500 | 23,530 |
| MEXICO | 2,900 | 2,900 | EASTERN EUROPE | 900 | 770 |
| ARGENTINA | 400 | 400 | CHINA | 800 | 700 |
| CHILE | 231 | 231 | | | |
| OTHERS | 164 | 164 | | | |
| TOTAL WESTERN HEMISPHERE | 60,262 | 56,941 | TOTAL EASTERN HEMISPHERE | 206,462 | 177,200 |
| TOTAL WORLD 1957 — 266,724 | | | | | |
| TOTAL WORLD 1956 — 234,141 | | | | | |

SUMMARY OF TOTAL RESERVES

| YEAR | RESERVES AT BEGINNING YEAR | ADDITIONS DURING YEAR | REDUCTIONS | RESERVES AT END OF YEAR | RATIO OF (b) RESERVES TO PRODUCTION |
|------|----------------------------|-----------------------|------------|-------------------------|-------------------------------------|
| | MILLION BARRELS | | | | |
| 1951 | 90,224 | 17,781 | — | 108,005 | 21 |
| 1952 | 103,603 | 19,416 | — | 123,019 | 20 |
| 1953 | 116,575 | 21,355 | — | 137,930 | 20 |
| 1954 | 135,189 | 27,878 | — | 163,067 | 20 |
| 1955 | 158,142 | 30,501 | — | 188,643 | 20 |
| 1956 | 189,260 | 51,222 | — | 240,482 | 20 |
| 1957 | 234,141 | 33,524 | — | 267,665 | 20 |
| 1958 | 266,724 | — | — | 266,724 | 20 |

^a Including reserves of minor amounts, particularly in the U.S.A.^b Reserves at end of year, production during year.

SOURCES: U.S.A. — American Petroleum Institute; Canada — Canadian Petroleum Association; U.S.S.R. — U.S.S.R. Oil Journal.

Mr. Borden

ROYAL COMMISSION

ON

ENERGY

HEARINGS

HELD AT

MONTREAL

P. Q.

VOLUME No.:

541

DATE:

JUL 14 1958

OFFICIAL REPORTERS

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ROYAL COMMISSION

on

ENERGY

Proceedings of hearings
held at Montreal, P. Q.,
commencing Monday, July 14,
1958

PRESENT:

| | | |
|-----------------------------|---|----------|
| MR. H. BORDEN, C.M.G., Q.C. | - | Chairman |
| MR. J. L. LEVESQUE | - | Member |
| DR. R. D. HOWLAND | - | Member |
| DR. R. M. HARDY | - | Member |
| MR. L. J. LADNER | - | Member |
| MR. G. E. BRITNELL | - | Member |

COMMISSION COUNSEL:

Mr. A. S. Pattillo, Q.C.

Mr. M. H. Patterson

| | | |
|----------------------|---|-----------------|
| Mr. J. F. Parkinson | - | Secretary |
| Major N. L. Lafrance | - | Asst. Secretary |



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7444

Montreal, Quebec,
July 14, 1958.

---On resuming at 10.00 a.m.

THE CHAIRMAN: The Commission will now resume its hearings.

This is the first meeting of the Commission in the Province of Quebec, and we are very happy to be here. I do not think it is necessary to read the Terms of Reference for the Commission; it has already been done several times publicly and I am sure that everyone in this room who is interested knows the Terms of Reference. However, if anyone wishes the Terms of Reference to be read we shall ask the Secretary to do so. If not, we shall proceed with our hearings.

Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman.



Submission of
NATIONAL COAL ASSOCIATION
Washington, D.C.

Appearances:

| | |
|---------------------------|---|
| Mr. Robert E. Lee Hall | - General Counsel, National Coal Association |
| Mr. Jerome J. McGrath | - General Counsel, Fuels Research Council, Inc. |
| Mr. Melwood W. Van Scoyoc | - Public Utility Consultant |
| Mr. J. A. McGrath | |

MR. PATTILLO: This morning we are going to hear from the National Coal Association of Washington.

You will recall that Mr. Hall and his associates were in Calgary and at our request, and to meet our convenience, they agreed they would adjourn their presentation in Calgary and come here. Mr. Hall did make some preliminary remarks in Calgary and I understand that he is going to start the presentation for the group today.

The submission should be marked as Exhibit M-14-1. I realize it has already been entered as CC-7-1 in Calgary.

THE CHAIRMAN: Do you think we should enter it again?

MR. PATTILLO: I think perhaps we should.



THE CHAIRMAN: Very well.

MR. PATTILLO: It will be marked M-14-1.

---EXHIBIT NO. M-14-1: Submission of National Coal Association.-- same as CC-7-1.

MR. HALL: Mr. Chairman and members of the Commission, I am beginning to feel like an old friend of the Commission, if only for the reason of frequent appearances. This is my third appearance before this distinguished group. I appreciate very much the opportunity of having a further chance to complete our statement.

Having appeared before your Commission on February 3rd and May 7th, in Calgary, I was confronted with a very practical problem of determining as to what extent I should repeat the statements made there in order to make a balanced and understandable statement here. I feel confident that the Commission will not overrule my decision to avoid needless repetition and confine my remarks to a brief review of the principal points which were made in my statement in Calgary on May 7th.

The other members of our team will, of course, be heard for the first time here. For the record, my name is Robert E. Lee Hall, and I am general counsel of the National Coal Association which is a trade association of bituminous



coal miners and operators of the United States representing approximately two-thirds of the commercially produced coal in our country. The other members of our team who will speak will be introduced at the time of their participation in today's proceedings.

The Commission may recall that I pointed out in Calgary that I also appeared in these proceedings in my capacity as general counsel of the Bituminous Coal Institute, as well as secretary of Fuels Research Council, Inc. I stated that the composite views to be expressed through our tripartite presentation has the endorsement of the National Coal Association, Fuels Research Council, Inc., the Anthracite Institute and the United Mine Workers of America.

You were advised in Calgary that the purpose of our appearance and participation in these proceedings relates directly to the vital interest of the United States bituminous coal industry in the developing fuel policies of your nation. I pointed out that fuel industries competing with natural gas in the United States have been adversely affected because of inadequacies of our federal law covering the transportation and sale of natural gas in interstate commerce.

We sought permission to tell our story in Canada, first, because of our understandable



self-interest in whatever may be done by your Government with respect to controls over the transportation and sale of natural gas in Canada or for possible export to the United States.

Our second reason for appearing was based upon an assumption that your Government would be interested in having the benefit of our experience with the regulated United States natural gas industry in order to avoid some of the mistakes that have created an unbalanced fuel economy in our country.

As I said in Calgary on May 7th, and I am quoting:

"You stand at the threshold of our
"lost opportunity."

Now, of course, I had in mind the fact that in 1938 we had the same opportunity you are now the beneficiaries of, and that is a chance to legislate wisely in the energy field.

Unfortunately, the official transcript of the record of these proceedings shows my statement as saying:

"You now stand at the threshold of
"your lost opportunity."

I hope ultimately that this will be demonstrated to be more of a typographical error rather than an unconscious and ironic prophecy.

The foregoing remarks constitute a very



brief review of my previous explanation of our reasons for participating in these proceedings. Having appeared twice before, as I said, I do not therefore want to exceed the bounds of our welcome. However, in the intervening period since my appearance in Calgary on May 7th, one outstanding event has occurred which I believe would have some relevancy to the objectives of your inquiry, and are perhaps worthy of passing comment here.

President Eisenhower and Prime Minister Diefenbaker have just completed a series of conferences, which, among other things, was reported to be designed to iron out growing differences between the United States and Canada. I know generally that our principals support the objectives of the heads of our two nations in their effort to solve some of these difficult international problems. However, I was so struck by the high Canadian interest in the meeting, when I arrived in Canada last week, that I asked the president of the National Coal Association and the president of the United Mine Workers of America to furnish me with their current views on the relevancy of the proceedings here today to the achievement and maintenance of better understanding and goodwill between our two countries. With the permission of the



Commission I would like to read the telegraphic responses into the record.

First is a telegram addressed to me under date of July 11th from Mr. Frank F. Kolbe, President of the National Coal Association, and it reads as follows:

"Please convey to the Canadian Royal Commission on Energy our view that its recommendations on export and Canadian use of natural gas can seriously affect not only the U. S. coal industry but also Canada's economic welfare and future relations between our countries. Unwise dissipation of U. S. natural gas for uneconomic industrial use has reduced U. S. natural gas reserve life index below the peril point. Surely Canada will not adopt an equally unwise fuel policy nor compound the mistake by committing its natural gas birthright to the promoters of the present plan for disposition of Canadian gas in the United States as well as Canada. Future good relations between our countries require careful consideration of these problems now. It will be too late when Canada needs gas and finds much of her resources have gone south and have damaged an essential industry which is vital to the economies of both our countries.



"We hope your presentation will interest the Commission in a full investigation of natural gas company practices and deficiencies in U. S. law which are needlessly contributing to waste of natural gas in the United States and will inevitably produce the same result in Canada."

The reply received under date of July 11 from John L. Lewis, President of the United Mine Workers of America, reads as follows:

"The United Mine Workers of America are unalterably opposed to the importation of unemployment into the United States in the form of natural gas from Canada. Essentially any importation of natural gas into the United States would mean exactly this for it would create further joblessness among American coal miners. Because of our great concern about this problem we have joined with other representatives of the United States coal industry in making representations before the Royal Commission on Energy of Canada at the hearings in Montreal on July 14. Assuredly, unnecessary seeds of international discord already have been planted in both Canada and the United States by the greedy interests who seek to strip Canada of one of her great



natural resources while at the same time causing needless economic problems for both the United States coal industry and its employees. The UMWA believes that the Borden Commission has the opportunity and the obligation to bring a halt to this discord. An exhaustive and comprehensive study of this problem and the adoption of wise policies would constitute an invaluable contribution to amity and goodwill between our two great nations. We believe that proper exploitation of Canadian and American natural resources under no circumstances should place an undue economic burden upon American coal miners."

Mr. Lewis, with characteristic forthrightness, has stated his position rather clearly. Most certainly we recognize that the United States Federal Power Commission and the United States Congress have important obligations in the field. We also feel that your Commission has an opportunity to make a contribution in the field of international relations by making an all-out study of the complicated problems implicit in your rapidly growing fuel economy and should carefully consider any policy recommendations that may affect the fuel economies of both countries.

There is present now the opportunity to



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7453

avoid foreseeable economic differences that could diminish the goodwill between the United States and Canada. Farsighted recommendations in the energy field can prevent unnecessary international irritations in the future.



At this point I would like to begin on page 8 of the submission which was put into the record on May 7th and I believe was re-identified today. By presenting our next participant, Mr. V. Scoyoc, of Washington D.C., will submit for your consideration a resume of the duties and activities of the Federal Power Commission pertaining to regulation of the natural gas industry in the United States and air his views concerning the efficacy of that regulation.

Mr. Van Scoyoc's qualifications for this assignment are, I believe, pertinent, and I would like to read them at this point.

Mr. Van Scoyoc is a consultant in the field of Public Utility Regulation. Prior to entering private practice in July of 1954, Mr. Van Scoyoc was, for a period of approximately sixteen years, a member of the staff of the Federal Power Commission, including three years of military leave during World War II. In the last nine years of his period of employment by the Commission, he was Assistant Chief of its Bureau of Accounts, Finance and Rates. This is the Bureau which, during that period of time, had major responsibility other than legal for all matters dealing with the regulation of natural gas companies.

Before employment by the Federal Power Commission, Mr. Van Scoyoc was for approximately ten years on the staff of the Public Utilities Commission of Oregon, which is charged with the



regulation of public utilities in that state. This employment covered two periods of service, there being interposed employment for one year by an electric utility in Oregon. He is a graduate engineer, having received a degree in 1927 from Oregon State College. The bulk of his consulting practice involves the presentation of state regulatory commissions, other state agencies, municipalities, and distribution utilities in rate proceedings before the Federal Power Commission. He also appears in proceedings before state regulatory commissions in behalf of municipalities, other public agencies and industrial customers. Mr. Van Scoyoc.

MR. VAN SCOYOC: ADMINISTRATION OF
THE NATURAL GAS ACT. 1. Rate Regulation

Immediately after the Natural Gas Act became law in June of 1938, the Federal Power Commission, in response to complaints of municipalities and state regulatory commissions, and on its own motion, instituted investigations of the rates of many of the natural gas pipeline companies subject to its jurisdiction. In the course of these rate investigations, it concluded that the most fair and equitable basis of rate regulation could be accomplished through the use of what was known as the prudent investment or cost-rate base method of rate regulation as contrasted with the indicated constitutional requirement at that time of the "fair value" method.



The use of a cost rate base was held to be constitutional by the United States Supreme Court. Ever since the Supreme Court held that it was not incumbent upon the Commission to receive evidence of reproduction cost or fair value, such evidence has been excluded when offered. The situation is now such that no natural gas company attempts to claim other than a cost rate base.

Under the cost method of regulation, the Commission determines the annual cost of service based upon the use of a representative test period. Included in the annual cost of service is the cost of gas purchased from other producers or pipeline companies; operating and maintenance expenses, administrative and general expenses; annual depreciation, taxes, including income taxes and a fair return on the rate base. The rate base is computed by taking the original cost of constructing the facilities, deducting therefrom the accrued depreciation and depletion, and adding an allowance for working capital.

It is the general rule to include in the cost of service all actually experienced costs which have been properly accounted for under the Commission's Uniform System of Accounts. There have been a few instances where expenditures have been excluded where they were not supported by the natural gas company or where the Commission found they were not properly includable within the test period. Costs which



arise by reason of transactions between affiliates are scrutinized. It has been the policy of the Commission to exclude from the cost of service any items of expenditure arising from affiliated company transactions which are in excess of the cost to the affiliate, including a fair return on the capital employed.

The amount of working capital allowed by the Commission to be included in the rate base is based upon a formula, which evolved from detailed studies made in the early years of the Commission's regulatory experience. The allowance consists of the average amount of materials and supplies on hand and average cash working capital equivalent to forty-five days of operating expenses, average amounts for prepaid expenses and less a deduction for cash available to the natural gas company from accruals of Federal income taxes.

In determining the fair rate of return, the Commission considers a wide range of evidence dealing with interest rates of debt securities and the costs of other kinds of capital. The Commission uses what is generally termed the "cost of capital approach" in reaching a decision as to the fair rate of return, that is, the rate of return is based upon the actual cost of debt and preferred stock capital to the natural gas company plus an estimate of the cost of its equity capital.



From 1940 until about 1946, the Commission found six and one-half per cent a fair rate of return for natural gas companies. This return was subsequently reduced to six per cent and, in one case, went as low as five and one-half per cent. For the past several years the Commission's rate of return allowance has been six per cent, although in the case of two companies whose capital structures included relatively large portions of equity capital, the Commission has allowed a rate of return of six and one-quarter per cent. Because of the high leverage available for equity capital in pipeline company capital structures, an over-all rate of return of six per cent usually results in a return for equity of from nine to twelve per cent. Although most of the natural gas pipeline companies claim that a six per cent rate of return is inadequate, nevertheless such companies have been able to attract several billion dollars of new capital in the past ten years based on the earnings provided by such rate of return.

Probably one of the most controversial issues with which the Commission must deal in rate proceedings is the allocation of the over-all cost of service between customers or classes of customers. Inasmuch as most pipeline companies make some sales for consumption or intrastate sales for resale, a cost allocation is required in virtually every rate proceeding to ascertain the cost applicable to the jurisdictional business.



In addition to its use for segregating costs between the non-jurisdictional and jurisdictional business, it is also used to allocate the costs between the various classes of jurisdictional customers. Thus it forms a basis for the design of the rates which are charged by pipeline companies.

The Commission has evolved a cost allocation procedure which is with virtually no exception used to serve both purposes. The allocation method has had judicial sanction and has withstood numerous assaults by the natural gas companies in Commission rate cases. Under the Commission's method the fixed costs or constant costs, that is, the return on investment, taxes, annual depreciation and a part of the pipeline operating expenses, as well as the demand charge on gas purchased from other pipeline companies, are first divided into two equal portions. One portion or 50 per cent of the total is allocated among customers or classes of customers on the basis of their use of the capacity of the pipeline at the time of the system peak, usually a three-day sustained peak. The other half of the fixed cost is added to the variable cost and the total thereof is allocated to customers or classes of customers on the basis of their annual use of gas. Variable costs consist of commodity cost of gas purchased, the cost of production and gathering, and a portion of the



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7460

transmission system operating cost - - mostly
compressor station fuel and maintenance.

There is a third class of costs which
are also allocated known as "customer costs."
These items consist of the costs incident to
metering, customer account and collecting, and
sales promotion.



Generally these costs are classified one-half to the demand function and one-half to the commodity function. However, they are sometimes allocated in part on the basis of the number of customers.

Under the Commission's method all customers share in at least one-half of the constant costs regardless of whether such customers take gas during the system peak period or not. Those customers which take gas during the system peak period, whether they be classified as firm or interruptible customers, bear a share of one-half of the constant costs. Thus, the interruptible industrial customers, both those supplied directly by pipeline companies and those supplied through sales to distributors of gas on an interruptible basis for industrial purposes, carry some of the constant costs and overheads of the pipeline system.

As previously mentioned, the costs classified to the demand function, that is, the one-half of the constant costs, are allocated to customer classes on the basis of their respective peak responsibilities whereas the commodity costs, which include one-half of the constant costs plus all of the variable costs, are allocated to customer classes on the basis of their annual volumetric requirements. The peak responsibility of each class of customers is determined by ascertaining their peak requirements



during the three-day maximum sustained peak of the pipeline system. The peak responsibility is a controversial issue in some cases as some companies prefer to use a single-day peak rather than a three-day sustained peak. Others prefer to use the maximum demand of the firm customers as a basis for determining the total peak rather than the maximum system peak.

2. Below Cost Sales of Natural Gas:

The pipeline companies desire to have more of the costs classified as constant costs since that process results in lesser costs being assigned to their non-jurisdictional business. To put it more simply, the assignment of a larger share of the costs to the demand function reduces the costs applicable to the interruptible industrial customers who are curtailed or interrupted entirely at the time of maximum system peak.

Because of the increasing cost of gas in the field, which has resulted in an increasing ratio of variable costs to the total cost of service, the pipeline companies have attempted through one or more devices to transfer more of the commodity cost to the demand component so as to lessen the impact on the commodity rate.

I have been discussing the over-all, system-wide cost allocation procedure of the Commission. As most of the long line transmission



companies have what are known as rate zones with different rates in each of the zones, it has been necessary in some cases to make what are known as zone cost allocations. The rate zones generally start at the supply end of the line and continue to the terminal market end of the line. Most of the zone boundaries coincide with state lines or are placed at the inlet side of the compressor stations. However, there is no particular fixed pattern in this respect. As a matter of fact, most of the zone boundaries were established arbitrarily and have been maintained through the years because of historical precedent.

The Commission does not have a single definite formula for use in allocating costs to the various rate zones. However, it has indicated its acceptance of the so-called demand-mile, commodity-mile method. This method involves weighting the demand and commodity costs applicable to each zone by the mileages between such zones and the source of supply.

In the design of appropriate rates for pipeline companies, the most important factor is, of course, the recovery of the cost of service applicable to the jurisdictional business of the pipeline company. Although companies have strongly contended that the design of rates was the particular province of management not to be interfered with by regulation, the Commission has rejected that



argument. It has held that it must make certain that the rates conform to sound rate-making principles. The Commission has prescribed in numerous instances the form of rate and many of the terms and conditions under which natural gas is sold for resale in interstate commerce.

When the natural gas companies first came under the Commission's jurisdiction, all of their rates were individual contract rates with their customers. In 1948 the Commission was successful in converting the contract rates to uniform tariff rates, thereby greatly reducing the number of rate schedules on file and making the rates more understandable, definite and certain.

Generally speaking, the respective demand and commodity costs resulting from the allocation procedures which I have described are used as the basis for computing the two-part demand and commodity rates. However, in recent years there has been a marked effort on the part of some natural gas companies to depart from these allocated costs and to increase the demand rate above allocated costs and thus decrease the commodity rate below allocated costs. The reason given for so doing is that the price of gas has been increasing in comparison with the prices of other fuels, thus narrowing or obliterating the price advantage which the natural gas industry



has enjoyed over other fuels in many sections of the country during the past decade. This argument is supported by the claim that the natural gas industry needs to make interruptible sales for industrial use in order to secure a high load factor operation, which in turn will result in a lower cost of service, particularly to the domestic and commercial consumers.

While it is a well recognized fact that high load factor operation results in a lower overall unit cost of operation, it does not necessarily follow that high load factor operation achieved through large scale interruptible sales of gas is in the best interests of the ultimate consumer -- that is, the residential and commercial consumer. This is particularly true when it is necessary to artificially depress the commodity rate and increase the demand rate so as to secure that type of business. Moreover, the beneficial effect of high load factor operation is minimal in the upper ranges of system load factors. On the other hand, the low load factor customer, which is primarily the residential heating customer, is penalized by an increase in the demand rate. Such penalty may exceed any benefits derived from high load factor operation of the pipeline through interruptible sales. A number of companies have developed underground storage reservoirs near their market areas which makes



unnecessary large scale sales of gas for boiler fuel purposes.

3. Certificates of Convenience and Necessity: In determining whether a particular application meets the test of present or future public convenience and necessity with respect to the construction, operation, extension, or acquisition of facilities to serve new or existing markets, the Commission has applied certain standards and tests. Briefly, they include an inquiry into and consideration of the facts and circumstances as to (1) whether the gas supply is adequate for the service proposed to be rendered, (2) whether the facilities are properly designed for the proposed service, (3) whether the estimated construction and operating costs are reasonable, (4) whether the proposed plan of financing is sound, (5) whether the market demand for the proposed service is available at the rates proposed to be charged, and (6) whether the project is economically and financially feasible; that is, whether the estimated revenues from the project will provide for the recovery of the costs of operation, depreciation, taxes, and a fair return.

It has been the general practice of the Commission in certificating new pipeline ventures to require the applicant to have an initial reserve of gas under contract, or held under leases, sufficient



to meet the customers' peak day and annual requirements for a period of approximately twenty years. For existing pipeline companies with a record of experience in acquiring gas reserves and of meeting the requirements of their customers, a volume of reserves sufficient for periods of fourteen to eighteen years have been found by the Commission to be adequate. For a major expansion of an existing pipeline system or for a new pipeline venture, the applicant is required to submit a complete gas reserve study. The Commission's staff of geologists and reservoir engineers review the applicants' estimates and on occasion submit their independent estimates of available gas reserves and the ability of the wells to deliver the required volumes of gas.

The Commission's rules provide for the filing of voluminous data in support of a major certificate application. The rules also provide for what is known as abbreviated applications where the proposal of the applicant does not require all the data specified for a major application. The Commission's rules also provide for what is known as a shortened procedure type of hearing where there is no opposition to the proposed project. In such instances a brief hearing is held before a Presiding Examiner, the Commission's Staff Counsel being the only person appearing and making the necessary recitals for the record. Inasmuch as the Commission



is required to hold a hearing on each application, this procedure was devised to expedite the processing of uncontested applications.

The Natural Gas Act provides that a certificate may be issued to a new company to serve an area already being served by another natural gas company. Occasionally the Federal Power Commission has looked with favor upon the presence of competition between two pipeline systems to serve the same market area and has found that the market was adequate to support both the existing and new supplier. Where this competitive situation is present, certificate proceedings are usually lengthy and are of a decidedly adversary nature.

Interventions in certificate proceedings are generally made by customers of the natural gas pipeline company, prospective customers, interested state and municipal agencies, and competing fuel interests. The Staff of the Commission actively participates in these proceedings.

In many instances the Commission attaches conditions to its grant of a certificate to the pipeline company. These conditions fix the time when construction of the project shall commence and be concluded and may also deal with rates, the securities to be issued, and other matters which the Commission feels are necessary to protect the public interest.



While the Commission does not have rate regulatory jurisdiction with respect to sales by pipeline companies to direct industrial customers, nevertheless it has and exercises the authority to authorize or deny such direct sales under its power to issue Certificates of Public Convenience and Necessity.

4. Importation and Exportation of Natural Gas: Applications to export or import natural gas are generally intertwined with applications under Section 7(c) of the Natural Gas Act to construct and operate facilities. There is also involved compliance with Executive Order No. 10485 dealing with border facilities and connections. Thus, the aspects of importation and exportation generally receive considerable Commission attention. While the Commission attempted a number of years ago to apply the same standards of public convenience and necessity to export and import applications as it does to Certificate applications, the courts held that the standards under Section 7(c) do not apply as such.

VII GROWTH OF THE NATURAL GAS INDUSTRY UNDER REGULATION.

At the time the Natural Gas Act was enacted in 1938, the interstate transmission of natural gas was virtually in its infancy. Although several long distance gas pipelines had been placed in operation in the late 1920's, no large scale expansion occurred





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7470

ing the depression years. From 1938 until the
nd of World War II only a very moderate expansion
of the pipeline industry took place. But ever since,
we have witnessed a phenomenal growth. As of this
time every state in the United States, with the
single exception of Vermont and Maine is receiving
some natural gas service. More than eighty-five
per cent of the natural gas sold to domestic,
commercial and industrial customers in the United
States is hauled through the interstate lines and
sold to distribution utilities at rates subject to
regulation under the Natural Gas Act.



At the outset of the Commission's regulatory experience, it took forthright action to carry out the intended purpose of the Act. As previously mentioned the Commission commenced a number of rate investigations. During the period extending from 1940 through 1952 it secured a number of very substantial reductions in resale rates. In this process the Commission established new regulatory law through overcoming the handicap of the fair value Constitutional requirement. Rate making was greatly simplified. At the same time investors were assured of a fair return upon the capital actually invested in the pipelines.

Commencing in 1949, natural gas companies began to file applications with the Federal Power Commission for increases in their rates. Three major causes accounted for these increases: First, the increased costs of labor, material and taxes stemming from the inflationary trends, which affected all prices; second, the increased costs which occurred by reason of adding system capacity at a higher unit cost than that experienced for the existing capacity; and third, increased costs due to the higher prices paid for the purchase of natural gas in the producing fields from non-pipeline producers. Of these three factors, the greatest impact was the higher cost of purchased gas. For example, in 1946 seventeen of the major natural gas pipeline companies



paid on the average 4.4 cents per Mcf in the field. These companies are now paying on the average more than 10 cents per Mcf, and some companies are in the 14 cents - 16 cents range. New contracts in some of the producing areas range from 20 cents - 25 cents per Mcf.

As of this time more than a half billion dollars of rate increases have been filed by pipeline companies. Not all of these increases have been granted in full. Approximately \$200 million of increases are pending. Some companies during the period of six years from 1952 through 1957 have filed as many as seven successive rate increases.

These increases in pipeline rates brought about retail rate increases in many sections of the country. The average revenue received by utilities from sales of natural gas per thousand cubic feet in 1956 for the entire United States was approximately 49.2 cents per Mcf as compared with the average revenue in the 1946-1950 period of 33.8 cents. While all of this increase is not attributable to pipeline rate increases, nevertheless such increases have, in my opinion, contributed materially to the increases in retail natural gas rates.

Increases in retail rates have not been confined to the non-producing states. The producing states have also experienced such increases. For example, during this same period increases have run



from 23 per cent in Texas to a 42-1/2 per cent increase in Oklahoma and a 49 per cent increase in Arkansas.

The growth in the natural gas pipeline industry as well as the distribution and sales of natural gas to ultimate consumers has been tremendous. In the fourteen year period, 1932-1946, sales of natural gas by utilities rose from approximately 762 billion cubic feet to approximately 2.13 trillion cubic feet, an increase of approximately 180 per cent. In 1957, utility sales of natural gas amounted to approximately 6.7 trillion cubic feet, or an increase of approximately 215 per cent in ten years.

Sales by most of the natural gas transmission companies have greatly increased under regulation. For example, Panhandle Eastern Pipeline Company increased its sales from approximately 70 billion cubic feet in 1942 to approximately 412 billion cubic feet in 1957. El Paso Natural Gas Company had sales of approximately 45 billion cubic feet in 1942. Its sales in 1957 were slightly more than 1 trillion cubic feet, including sales by its subsidiary, Pacific Northwest Pipeline Corporation. Northern Natural Gas Company is another company which has had a phenomenal growth. Its sales in 1942 amounted to approximately 66 billion cubic feet and in 1957 to approximately 390 billion cubic feet.

Since the advent of Federal regulation there



has been a large number of new pipeline ventures certificated by the Commission. Probably the most spectacular growth has been that of Tennessee Gas Transmission Company, which went into operation in 1944. In 1945, which was its first full year of operation, Tennessee's sales and transportation of gas amounted to approximately 73-1/2 billion cubic feet. In 1957 sales and transportation volume had increased to approximately 674 billion cubic feet. Texas Eastern Transmission Corporation went into operation in 1947. In 1948, its first full year of operation, it had sales of approximately 118 billion cubic feet. In 1957 its sales had increased to some 558 billion cubic feet. Transcontinental Gas Pipe Line Corporation went into operation in 1951 and its sales in 1952 were approximately 191-1/2 billion cubic feet. In 1957 they were approximately 283 billion cubic feet. It is now asking the Commission to authorize another major expansion of its pipeline system.

The rapid and spectacular growth of the natural gas industry to the status of the sixth largest industry in the United States has created many problems for all branches of the industry, the Federal Power Commission, state regulatory agencies, the coal industry, and many other segments of our economy including the ultimate consumer. Some very serious problems remain to be solved before



all elements of the consuming public receive the protection they deserve.

THE CHAIRMAN: Thank you very much, Mr. Van Scoyoc. Mr. Hall and gentlemen, I think that this room is required for a period of approximately three-quarters of an hour for a memorial service to the late Dr. Warner, who passed away suddenly over the week-end. I think that now we shall adjourn until eleven forty-five, when we will reassemble in this room.

---Recess.

THE CHAIRMAN: The Commission will now resume its hearings. Mr. Hall.

MR. HALL: Thank you, Mr. Chairman.

Under date of March 20, 1958, the Royal Commission on Energy transmitted to our group a letter wherein it was indicated that the Commission would be interested in our views on the relationship of conservation to the practice of allowing natural gas "to be sold on an interruptible and/or 'dump' basis in industry." The letter pointed out that this matter has been the subject of Federal Power Commission consideration in administering the Natural Gas Act since 1938. The letter concluded by indicating that the Royal Commission hearings had not thus far produced testimony on this important subject matter. Accordingly, we have undertaken herein to present



for Commission consideration information reflecting the experience of the United States coal industry with the problems posed by the sale of natural gas on an "interruptible" or "dump" basis in industry and the inverse relationship of this practice to sound principles of conservation and the necessary maintenance of a balanced fuel economy in the United States.

This phase of our submission will be presented by JEROME J. McGRATH, Esq., who has had wide experience as an active participant in the trial of Federal Power Commission cases on behalf of coal, railroad, and labor intervenors. Mr. McGrath will present our views with respect to important questions bearing upon conservation and industrial dump sales. The qualifications of Mr. McGrath for this assignment are set forth herein below:

Jerome J. McGrath is a partner in the firm of McGrath and McGrath, Attorneys at Law, 520 Shoreham Building, Washington, D.C., and is also General Counsel of Fuels Research Council, Inc. Mr. McGrath is a 1947 graduate of Georgetown University College of Arts and Sciences with a Bachelor of Science degree. He received his legal education at Georgetown University School of Law with an LLB in 1950.

Since 1951 Mr. McGrath has been



almost continuously engaged in the active trial of, and participation in, natural gas matters before the Federal Power Commission of the United States, representing competitive fuel and transportation interests, principally the National Coal Association, the United Mine Workers of America, Fuels Research Council, Inc., the Anthracite Institute and various coal carrying railroads.

Mr. McGrath is a member of the Federal Power Bar Association and is a member of its Executive Committee. He belongs to the American Bar Association and is admitted to practice before the United States Court of Appeals for the District of Columbia Circuit and the United States District Court for the District of Columbia. He is the author of an article entitled "Federal Regulation of Producers in Relation to Conservation of Natural Gas" which appeared in the June 1956 Georgetown Law Journal.

MR. JEROME J. McGRATH: Thank you, Mr. Hall and Mr. Chairman.

VIII CONSERVATION. Conservation as we use the term is intended to cover the economic aspects of that problem and, more particularly, the concept of inferior vs. superior uses of this limited natural resource in relation to Federal Power Commission control and regulation.

The use of natural gas as boiler fuel



generally recognized as an inferior use to be avoided except in instances where the public interest clearly requires its expenditure. The Federal Power Commission has expressed this view from time to time but has not established a definite policy on the conservation of natural gas by specific regulation of its end use. Most observers agree that the Federal Power Commission would prefer to have a specific legislative mandate conferring upon it the authority to exercise sound principles of conservation in the administration of the Natural Gas Act -- but the statute now stands mute with respect to this important public obligation. It is certain that the absence of statutory language in the field of conservation accounts for a large measure of the hesitancy of the Commission to accept the challenge of this public obligation. However, it has not been entirely silent on this subject.

In the Matter of Mississippi River Fuel Corporation, Docket No. G-1995, the Commission said:

"We have repeatedly held that the use of natural gas as boiler fuel is an inferior usage and that, while it is not to be denied in all situations, it should be permitted only on a positive showing that it is required by public convenience and necessity."

And as long ago as 1940 the Commission's 20th Annual Report to Congress stated:



"General use of natural gas under boilers for the production of steam is, however, under most circumstances, of very questionable social economy." (Page 79)

The instances wherein the Commission has followed a conservation policy have been rare indeed. In 1948, for instance, it issued a certificate to Transcontinental Gas Pipe Line Company, Inc., to transport gas from Texas and Louisiana for resale in the Middle Atlantic States. In that case it noted that large amounts of natural gas were proposed to be sold on an interruptible basis for underfiring boilers in electric power plants. Accordingly, it required Transcontinental to study the feasibility of underground storage as a means of eliminating the interruptible boiler fuel deliveries. Since that time, by a series of expansions, all authorized by the Commission, Transcontinental's boiler fuel sales have increased alarmingly and to date it has no storage project of its own in operation, and only recently filed an application for a certificate requesting authorization to provide storage service.

History amply demonstrates the fact that the Commission has given only lip service to the theory of conservation by controlling the end use of natural gas. In actuality it has permitted such sales to grow and expand in astonishing proportions. The records of the Commission show that whereas in



1948 478,097,000 Mcf of gas were used in electric utilities, in 1957 1,239,310,686 Mcf were used, an increase of 159 per cent. This shortsighted, spendthrift policy of the Commission has been a principal contributing factor not only to the rapid depletion of the reserves of natural gas in the United States, but also has accentuated the demand for gas in the field with the resultant rise in the cost of gas. It is axiomatic that the pressure of rising gas demand upon the supplies available can and does push the price up.

If we were to take only the boiler fuel gas used in electric utilities in the U.S. in 1957 and relate it to the estimate submitted to you by the Petroleum and Natural Gas Conservation Board of Alberta reflecting proven and probable gas reserves of 21 trillion cubic feet, it can be seen that for this single use alone Alberta's reserves would last less than seventeen years. Using British American Oil Company Limited's estimates of producible reserves in Western Canada of 28.591 trillion cubic feet, they would last only 23.1 years. The utility figures used above do not reflect gas used for boiler fuel in other industrial establishments. The market estimates in the Midwestern case, for example, indicate that in the first year 75 per cent of the total sales by distributors are on an interruptible or overrun basis. One distributor alone, Iron Ranges Natural



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7481

Gas Company, whose supply would be strictly Canadian gas, would have industrial sales amounting to 96.7 per cent of its first year sales, reducing to 87.2 per cent in the fifth year.



The producing States have taken great strides in reducing the physical waste of gas, but little or nothing has been done to eliminate economic waste. Most producing States presently control the production of gas by imposing certain requirements on producers, such as pooling, unitizing, royalty taking, allowables, well-spacing, elimination of flaring and minimum price fixing in areas of production. But in none of these production regulations is there any concern for the end use of gas. In speaking of waste, producing States generally refer to prevention of physical waste of natural gas which might otherwise be sold at a profit, without regard to the economic waste of a commodity used to undersell a competitive fuel.

In the famous Phillips decision of the U. S. Supreme Court, which has been mentioned to you before with varying degrees of reverence or aversion by others in these proceedings, the Supreme Court ruled that the Federal Power Commission had control over the producers who sold their gas in interstate commerce. Some producers to avoid regulation have removed their product from the market, others have sold only within the State of production and others have entered into contracts directly with the consumer thus removing the sale from Commission jurisdiction.

This latter approach is of fairly recent origin. However, already several applications for facilities to transport the gas for the utilities have been presented to the Commission for its



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approval. Some of these applications are still pending, but in at least one instance the Commission has approved the construction of facilities to transport gas purchased in Texas to be used in electric generating facilities in Florida. But more important, it appears to be a growing trend in the United States. So here we find the producing States not concerning themselves with what the gas will be used for; the producer and the consumer circumventing regulations; and, the Federal Power Commission, in at least one instance so far, permitting facilities to be constructed which would be used to transport gas to be fired under boilers.

It is not our intention here to imply that the use of natural gas in large steam generating boilers is the only inferior or "low value" use to which natural gas is presently being put, but it is, quantitatively, the largest single, economically wasteful use now prevalent. The utilization of natural gas under boilers of electric generating stations is the use for which we presently have the most accurate information statistically, and is the "inferior" use to which the attention of the Federal Power Commission has most frequently been directed over the years that the Commission has been administering the Natural Gas Act.

IX, INTERRUPTIBLE DUMP SALES: The coal interests for many years have actively participated in proceedings before the Federal



Power Commission in attempts to dissuade the Commission from permitting boiler fuel sales where coal is readily available and at reasonable cost. For the most part, natural gas sales for this lower form of use are made on an interruptible or dump basis. This is brought about by the attachment of a high space heating load, which is a low load factor use, thus creating deep valleys of off-peak gas available on an interruptible basis. We have urged the Commission to take positive steps to diminish the off-peak dumping of natural gas, but to little avail. This could be accomplished in at least three ways: (1) Placing a volumetric limitation on the annual amounts of gas sold to the distributing companies, thereby restricting the amounts available for off-peak dumping; (2) requiring the distributing companies as well as the pipe line companies to make maximum use of storage facilities available and encouraging the development of new storage fields; and (3) discouraging dump sales at below cost by regulating rates in such a manner as to effect a minimal use of gas for boiler fuel purposes.

As Mr. Van Scoyoc has pointed out, it is not imperative that distributors or pipelines operate on a 100 per cent load factor basis. Consequently, if the boiler fuel use of gas were curtailed by reduction of load factors to in the neighborhood of 60 per cent to 70 per cent, the remaining reserves of natural gas could be pre-



served for higher purpose uses. This type of operation may increase slightly the cost of gas to the ultimate consumer, but the increase, in most instances, would be so small when compared to the over-all, long-run benefits to be derived by extending the life of gas supply, that it becomes insignificant.

The potentialities of storage operations in the United States have not been adequately explored. However, nearly everyone recognizes the merits of this type of operation. Storage evens out the swings by transmitting gas from the source of supply into storage during off-peak periods and subsequent withdrawal to meet peak requirements. As a consequence, less transmission capacity is required thus reducing the cost of transmission facilities required to meet peak demands and, in addition, minimizing the off-peak capacity available for dump sales.

The Federal Power Commission has encouraged the development of storage and some of the transmission and distribution companies have or are attempting to develop storage fields, but the lack of a firm policy on the part of the Commission in this regard definitely has retarded its proper growth and expansion.

As pointed out hereinbefore, the Federal Power Commission has a limited jurisdiction over



rates as a method of conserving natural gas for superior uses. Simply stated, there is no rate regulation dealing with the conservation aspect, This has enabled producers and pipelines to dump natural gas into power plants and other inferior uses at a price just below the competitive price of coal and other fuels merely for the sake of capturing that market, without regard to the real or social costs. By social costs we mean the use of natural gas in displacing another more abundant fuel in plentiful supply and creating hardships in an industry already supplying the market, while at the same time rapidly depleting the limited natural gas reserves. Social costs take into account not the short-range disposal of natural gas, but, rather, the long-range conservation of gas for superior uses.

For natural gas is possessed of special qualities. It is particularly suitable for superior uses such as cooking, refrigeration, air conditioning, and water heating in homes and commercial establishments; in metallurgical processes for annealing and heat treating of metals where high temperature and close temperature control are required; in the chemical industry as a raw material from which many useful products are derived; and in other special advantage uses. It is truly a premium commodity. Yet each year



increasingly greater quantities of natural gas are wastefully burned under industrial boilers and in large steam electric generating plants and in other inferior uses, as, for example, in the manufacture of cement. Invariably where gas is dumped into large industrial plants for inferior purposes or in electric generation stations in coal consuming areas, it results in the displacement of large quantities of coal.

Mr. Justice Jackson of the Supreme Court of the United States, in his supplemental opinion in a natural gas case before that body, eloquently described the problem of conservation and the necessity for avoidance of interruptible dump sales in this manner:

"The heart of this problem is the elusive, exhaustible, and irreplaceable nature of natural gas itself. Given sufficient money, we can produce any desired amount of rail-road, bus, or steamship transportation, or communications facilities, or capacity for generation of electric energy, or for the manufacture of gas of a kind. In the service of such utilities one customer has little concern with the amount taken by another, one's waste will not deprive another, a volume of service can be created equal to demand, and today's demands will not exhaust



7488

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or lessen capacity to serve tomorrow. But
the wealth of Midas and the wit of man cannot
produce or reproduce a natural gas field."



MR. HALL: By way of conclusion, on behalf of our group today I would like to point out again it has been our purpose to illustrate to your Commission the infirmities which we believe exist in the Natural Gas Act in so far as they relate to the conservation of natural gas through regulation. In summation, may we say that because the Federal Power Commission has not been specifically directed by the Congress to preserve natural gas by control of its end use or to affirmatively establish a national fuel policy, it has not adopted a firm, forthright conservation policy. The end result, as I said earlier in this statement, has been the extravagant waste of our natural gas resources to the point where the life index of our natural gas reserves has fallen each year for the last twelve years and has reached the danger point of 21.4 years' supply. You still have the golden opportunity to protect the useful life of your natural gas reserves and at the same time preserve a fair and balanced fuel economy in Canada.

Accordingly, we submit for your consideration suggested recommendations which are presently lacking in the Natural Gas Act in the United States. The Federal Power Commission is not now vested with the power over direct industrial sales of natural gas. Control over



this type of sale, coupled with a specific directive to protect the public interest by adherence to sound principles of conservation, would go a long way towards establishing a sound fuel policy. There should be a duty on the part of the regulatory body to (1) recognize that defense and economy measures require the maintenance of the productive and supply capacity of the several fuel industries, including coal, and (2) give effect to sound principles of conservation in the utilization of natural gas in order to preserve available reserves of this valuable fuel. In addition, that in any rate making formula special prohibitions against the sale of natural gas at a price less than its costs, including the cost of transportation and sale, plus a fair proportion of the fixed charges should be included. This latter position would serve to establish and preserve, at least in part, a competitive balance between natural gas and other competing fuels. All of which would be a step in the right direction towards the achievement of the necessary goal of a balanced fuel economy in your nation.

Not only will such built-in regulations prevent useless waste of time in interpretation and experimentation, but a sound over-all national fuels policy will be established for future generations. This opportunity for us has all but



vanished -- your opportunity still knocks on the door of the future.

On behalf of my associates in this presentation, and the organizations for which we speak, I wish to again express appreciation to the Commission Chairman, Members, and Staff for affording us the opportunity to participate in these proceedings. It is hoped that this submission will serve some useful purpose in assisting your Commission in the formulation of its policy recommendations in the energy field. We will be glad to answer any questions you may have falling within the framework of our active experience under the Natural Gas Act and before the Federal Power Commission.

Also present at the table here today is Mr. John A. McGrath, Assistant General Counsel, who, if there are any questions, we would respectfully ask that he also, in the light of his experience, be permitted to participate.

Thank you very much.

THE CHAIRMAN: Thank you, Mr. Hall.

Mr. Pattillo

MR. PATTILLO: Thank you, Mr. Chairman.

In the first part of your submission there are references on two or three occasions to a phrase that I am not sure that I understand. It appears at the top of page 15 -- "the jurisdictional



business of the pipeline company." What does that phrase mean?

MR. VAN SCOYOC: Sir, the jurisdiction of the Federal Power Commission with respect to rates is limited to sales or resale at interstate commerce. In other words, the gas must then be sold to someone else for ultimate consumption. Gas which is sold by the pipeline company for ultimate consumption itself is not subject to the rate regulation of the Federal Power Commission.

MR. PATTILLO: So that if a pipeline company is selling to a distributing company, that comes within the jurisdiction, if it is a distributing company in a state other than the state in which the gas was purchased by the pipeline company?

MR. VAN SCOYOC: That is correct, sir.

MR. PATTILLO: But if the pipeline company purchases gas in a state where it is produced and then takes it to another state and sells it directly to the consumer, then there is no jurisdiction in the Federal Power Commission?

MR. VAN SCOYOC: No jurisdiction over any price at which it may be sold. There is jurisdiction so far as the transportation of the gas, and permission must be had of the Commission under Section 7 of the Act in order to make that sale. The price itself is free from regulation by the Federal Power Commission.



MR. PATTILLO: Is it regulated by anybody?

MR. VAN SCOYOC: It may be by a state regulatory commission, although experience has been that the bulk of those sales are not regulated as to price by any regulatory commission.

MR. HALL: Mr. Pattillo, may I interpose something in connection with your question? We were interested ourselves in the question of what degree of other regulation covers direct sales. We made a survey of the forty-eight states -- now are soon to be forty-nine. In spite of that perhaps we would have made inquiry in Alaska as well, and out of the forty-eight states only seven commissions felt, through their legal counsel, that they had any jurisdiction over such sale. Out of the seven states only about four actually exercised any control over direct industrial sales.

MR. PATTILLO: Now, is it limited to direct industrial sales? In other words, could you avoid regulation of price by having one company buy from the producer, transport and sell directly to all the consumers in another state?

MR. J. J. McGRATH: Mr. Pattillo, are you there speaking of the pipeline company transporting gas for direct sale to ultimate consumption by the consumer?

MR. PATTILLO: Yes.



MR. J. J. McGRATH: The transportation of that gas would still be subject to F.P.C. jurisdiction. If it is a pipeline company that has no resale business, it would be my opinion -- perhaps Mr. Van Scoyoc would differ with me -- that the rate would not be subject to F.P.C. jurisdiction.

MR. VAN SCOYOC: That is correct; the rate itself would not be subject to F.P.C. jurisdiction. If there was any regulation it must be by the state regulatory commission.

MR. PATTILLO: And most of them do not consider they have jurisdiction to do so?

MR. VAN SCOYOC: Not so far as these large industrial sales are concerned. If it is a sale direct for consumption, yes, that would in most instances be subject to F.P.C. jurisdiction.



MR. PATTILLO: What is the distinction between a direct industrial sale and a direct sale to Householder?

MR. VAN SCOYOC: Well, there is really no distinction other than the fact that the industrial sales are usually on large volume characteristics, and the State Commission may not have jurisdiction over that type of sale, or they may not exercise it if they do have jurisdiction. Generally, they would exercise jurisdiction if it is a sale for domestic purposes.

MR. PATTILLO: Now, page 10, when you are dealing with the cost method of regulation, you say in the first complete paragraph in that page:

"Included in the annual cost of service is the cost of gas purchased from other producers or pipeline companies".

Now, if I understand the Phillips case that price for gas purchased is now a matter of review by the Federal Power Commission, is that correct?

MR. VAN SCOYOC: Yes, that is correct.

MR. PATTILLO: Prior to that time it was not being reviewed. Any price could be paid and it was taken in as part of the cost of service, is that correct?

MR. VAN SCOYOC: Yes, as far as purchases from other producers who are not pipeline companies.

MR. PATTILLO: Now why was the change



brought about?

MR. VAN SCOYOC: Well, the change was brought about simply by reason of the decision of the Supreme Court which held that the time the Natural Gas Act was passed in 1938 that Congress intended it to cover all sales of gas for resales and Interstate Commerce regardless of who made them.

MR. PATTILLO: The reason I am inquiring about this is we have had people up here before us who have said that if we have an Energy Board created in Canada it is all right to regulate cost of transmission, but that it would be a mistake to regulate the cost of the gas at the wellhead or the gathering point. Now, from your experience in the States is there any good reason in your opinion why the price paid at the wellhead should be subject to regulations?

MR. VAN SCOYOC: Mr. Pattillo, in answering your question I want to make it clear that I am giving my own personal opinion. I do not know what the position of the National Coal Association might take with respect to that question, but in my personal view regulation at the wellhead or at the entry to the Interstate Pipeline is necessary if the public is to be protected in receiving gas at a reasonable rate.

That is my conviction based upon observations of what has transpired in the United States.

MR. HALL: I might say, Mr. Pattillo,



and to the Members of the Commission, that Mr. Van Scoyoc is indeed a private consultant. We brought him knowing full well that he was no captive witness of ours, and we have invited him to offer his personal views.

The National Coal Association, generally speaking, is opposed to undue or excessive government regulations which might be a general statement of policy.

MR. PATTILLO: Particularly if it came to be the coal industry that was being regulated?

MR. HALL: Indeed so. It has been in the past, and it worked out disastrously from the public interest point of view.

MR. PATTILLO: Now, I want to be sure that we clearly understand how this rate base created by the FPC works. Supposing you had a company that had facilities that had cost \$500 million; \$400 million had been supplied by borrowed capital, \$100 million supplied by equity, am I correct in thinking that the cost of service is calculated so that when you speak of the 6 1/2 per cent rate return you are speaking of the 6 1/2 per cent on the investment at \$500 million and one of the costs that is taken into consideration is the interest that you pay on the borrowed \$400 million? In effect, equity which has put in \$100 million is getting a return from the commencement, not of



6 1/2 per cent on its \$100 million, but five times that much because it is getting it on the \$400 million which it has borrowed?

MR. VAN SCOYOC: Maybe I can explain, or answer your question by giving an illustration using the same figures ~~that~~ you have used: the \$500 million would not be the capital cost of the entire project. It goes into the rate base that would be subject to deduction for crude depreciation, and an addition for working capital. That would be the rate base. The rate of return which is applied is applied to the total rate base. In other words, if on an overall basis it was determined that 6 1/2 per cent was a fair rate of return, it would apply to the entire \$500 million.

MR. PATTILLO: Right.

MR. VAN SCOYOC: Now, however, the company having borrowed \$400 million at say 4 per cent and putting in \$100 million by equity, those ratios and the respective costs of those two types of capital would be used in determining whether or not the 6 1/2 per cent of return was a fair rate of return on an overall basis to be applied to the \$500 million.

MR. PATTILLO: Yes, but am I not correct in this: that having determined the rate of return on your rate base of \$500 million, you are not required to pay out of that \$30 million as the case may be, or \$35 million the interest on your funded debt of



\$400 million? You get that apart from the cost. You can charge the interest on your funded debt as part of your expenses?

MR. VAN SCOYOC: No, you cannot, sir. They have to pay the interest out of the rate of return. In other words, the interest itself does not come into the cost of service.

MR. PATTILLO: I see, so that to that extent the gas companies operate on an entirely different principle than the oil companies do?

MR. VAN SCOYOC: Well, I would say at least the regulated gas companies certainly do.

MR. PATTILLO: Then the oil pipelines are, as I was suggesting a few minutes ago in both of their operations, they not only get the return on the rate base, but they charge as an expense the interest money which they need before determining how much money they have to have?

MR. VAN SCOYOC: I am not familiar, sir, with your oil pipeline companies here, but I do know that in the United States the interest must come out of the return such as I have described with respect to gas companies.

MR. PATTILLO: Oh, is that so?

MR. VAN SCOYOC: Yes, sir.

MR. PATTILLO: It would work exactly the same?

MR. VAN SCOYOC: It would work the same



way in the United States.

THE CHAIRMAN: I have an impression, Mr. Pattillo, that that point was not made sufficiently clear at our hearings in Toronto. In thinking about it afterwards, I know of no rate base where the interest on debt is not required to be met out of the rate of return rather than as an expense in determining the rate.

I do not think that was made sufficiently clear when that question was brought up in connection with the pipeline companies at our hearings in Toronto.

MR. PATTILLO: Well, I certainly am confused about the matter.

THE CHAIRMAN: Yes, I understand.

MR. PATTILLO: Would you like to ask any further questions on that, Mr. Chairman, before I go on?

MR. CHAIRMAN: No, I think that is clear to me as far as the practice in the States is concerned on these gas lines.



MR. COMMISSIONER HOWLAND: Mr. Pattillo, could I ask one further question on that? Mr. Van Scoyoc, if you borrow from the bank, the interest on that money would be allowed as an operating cost, is that correct?

MR. VAN SCOYOC: No, sir, it would not. No interest is allowed as an operating cost.

MR. COMMISSIONER HOWLAND: Thank you.

MR. PATTILLO: In view of what you have just been telling me, would you look at page 11? You say:

"Because of the high leverage available for equity capital in pipe line company capital structures, an over-all rate of return of 6 per cent usually results in a return for equity of from 9 to 12 per cent."

Would you explain that statement?

MR. VAN SCOYOC: Yes, sir. Taking your illustration again of the \$500,000,000.00, the rate base of \$400,000,000.00 of that capital was raised through the sale of debt securities, let us say, at 4 per cent. Of course, for that \$400,000,000.00 a company would get an over-all rate of return of $6\frac{1}{2}$ per cent, but it would have only to pay out 4, and therefore the additional 2 per cent would go to the equity and serve to raise the return on the \$100,000,000.00 of equity from $6\frac{1}{2}$ to 9 or 12 per cent, whatever the ratio



would come out at.

MR. PATTILLO: I follow it. Now, on page 13, you are explaining there as to the method that is employed by the Commission in breaking down the demand and commodity costs and allocating them. I wonder whether you would just put a clear statement for us on the record as to exactly what the Commission does in determining what is the demand cost and what is the commodity cost.

MR. VAN SCOYOC: Well, we start first with the total cost and the cost of service. In other words, that consists of cost of purchase of gas, say, operation and maintenance expenses, taxes, depreciation and a fair return on the investment. Those are the ingredients in the cost of service. Those costs are first divided between fixed costs and variable costs, the variable costs being those costs which in many instances vary with the volume of gas that will be transported through the line, and the fixed costs being those costs which do not vary directly or appreciably with the volumes. It has been the Federal Power Commission's allocation method, which is called the Atlantic Seaboard formula. It involves the division, first, of those fixed costs equally. 50 per cent of those costs are then assigned to what is known as demand function, and they are allocated to customers and classes of customers on the basis of the peak



responsibility of the various customers at the time of the system peak period. The remaining half of the fixed costs, plus all the variable costs, are then allocated between customers and classes of customers on the basis of the annual volumes of gas which each of those customers or classes of customers take from the pipe line. So you have two classes of costs finally brought together to determine the total cost to any particular customer or class of customer.

MR. PATTILLO: So that you then have a person who is using interruptible gas paying his proportion of the variable expenses and a part of the fixed expenses?

MR. VAN SCOYOC: Yes, sir.

MR. PATTILLO: Depending upon the quantity of gas that he took during the year, but not contributing to the demand?

MR. VAN SCOYOC: He does not contribute to the demand unless he is taking gas through the system peak period, in which case he would be assigned a portion of the demand costs.

MR. PATTILLO: Now, on page 15, you say in the last complete paragraph:

"Generally speaking, the respective demand and commodity costs resulting from the allocation procedures which I have described are used as the basis for computing the



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two-part demand and commodity rates. However, in recent years there has been a marked effort on the part of some natural gas companies to depart from these allocated costs and to increase the demand rate above allocated costs and thus decrease the commodity rate below allocated costs."

Now, has there been any success achieved at all in that?

MR. VAN SCOYOC: Yes, there has been some success achieved.

MR. PATTILLO: Would you develop that a little for us?

MR. VAN SCOYOC: I think the best illustration of that is the Northern Natural Gas Company, which serves the Mid-west region running on a line up to St. Paul and Minneapolis and parts of Nebraska and Iowa. They asked the Commission to permit a rate to be charged for resale business, which involved pegging the commodity rate in various zones at levels which were less than the rate would have been had the Commission's Atlantic Seaboard formula been applied precisely to their operations. There have been a few other cases where there has been some of what we call tilting upward of the demand rate and consequently lowering of the commodity rate.

MR. PATTILLO: Now, you go on to say



in the last sentence of this paragraph:

"This argument is supported by the claim that the natural gas industry needs to make interruptible sales for industrial use in order to secure a high load factor operation, which in turn will result in a lower cost of service, particularly to the domestic and commercial consumers."

That is a valid argument, is it not?

MR. VAN SCOYOC: Yes, sir, that is an argument which is made, but which in my opinion is greatly overdone, greatly over emphasised.

MR. PATTILLO: Well, is it not a fact that, if you are merely selling to a low load factor consumer, your costs are going to be way up, your costs of operation are going to be up, and the consumer will have to pay for it?

MR. VAN SCOYOC: That is particularly true when you have a load factor on a pipe line company which is in the low range of 50 per cent or less.

MR. PATTILLO: Yes. Now, if that pipe line company can increase its load factor by selling gas to a distributing company which in turn sells it as interruptible, does that not result in reducing the cost to the other consumers?

MR. VAN SCOYOC: That would follow, because the more units of gas that you can put through the



line with a fixed cost, of course, it lowers the unit cost. There is, as I have tried to point out, a serious problem, however, particularly when it is necessary to sell the interruptible gas at such a low price that that price does not really recover any substantial part of the fixed costs. In other words the margin between the out-of-pocket costs of the gas and the out-of-pocket costs of operating the pipe line and the price at which the gas is sold for interruptible purposes is so slight as not to make any real contribution to the over-all cost of operating the system. Then, if that is done, if those interruptible rates and the rate structure is predicated on departures from the use of cost, that is, if you artificially would raise the demand rate and lower the commodity rate in order to capture that particular interruptible business, it does put a burden on the low load factor domestic customers because they are charged with demand charges which they would ordinarily would not have to pay.

MR. PATTILLO: Well, I will pursue that further after lunch.

THE CHAIRMAN: We shall now adjourn until, say, 2.30 this afternoon. That should give us time enough. Does Counsel agree? Is that satisfactory to you, Mr. Hall?



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7507

MR. HALL: Yes, sir.

THE CHAIRMAN: Until 2.30 this
afternoon in this Chamber.

--- Whereupon the proceedings adjourned at 12.38 p.m.
to be resumed at 2.30 p.m.



---On resuming at 2.30 p.m.

THE CHAIRMAN: The Commission will now resume its hearings. Mr. Pattillo?

MR. PATTILLO: Thank you, Mr. Chairman.

Just before lunch we were dealing with this matter of interruptible gas. Now, do you agree with me that if a pipe line is not selling direct to a consumer but only to a distributing company, and is selling at a load factor of, say, 90 per cent, then it is simply selling gas as a commodity at a load factor and the problem of whether the gas is ultimately used as interruptible or something else does not enter into the picture?

MR. VAN SCOYOC: Certainly not, as far as the rate making is concerned under the Natural Gas Act.

MR. PATTILLO: Then we come to a distributing company that has bought the gas from a pipe line company at, say, a 90 per cent, and it has a firm load factor of, say, 45 per cent, firm customers, and that is all their load is, but it has had to buy, in order to get the cheapest price, at a 90 per cent load factor: now, is not the distributing company's problem the question as to what it is going to do with this over-supply of gas which it has on hand and provided it sells that gas at no less than its cost is there anything wrong with it?



MR. VAN SCOYOC: Well, it should recover its cost, and by "cost" I mean not only the amount which it might pay the pipe line company at the commodity rate but also any cost incident to its own operation in putting that gas into somebody's plant, and, of course, the larger contribution that interruptible sale can make to the total revenues the better advantage the company will have and also the ultimate consumers who use it on a firm basis.

MR. PATTILLO: Yes, the chap who has a house where he has a gas stove and everything, he gains if the remaining 45 per cent has been able to be sold at something more than cost?

MR. VAN SCOYOC: At something more than cost, yes, sir. By "cost" I mean the full cost, not some artificial cost.

MR. PATTILLO: All right. Let us see what this problem of artificial versus real cost is for a moment. Do you agree with me that everyone has no difficulty in ascertaining what the total outgo is, but when you come to allocate that outgo it is purely a matter of judgment?

MR. VAN SCOYOC: It is judgment based upon the application of certain principles.

MR. PATTILLO: But there is a margin of error in allocation that cannot exist in ascertaining the total cost?



MR. VAN SCOYOC: That is true.

MR. PATTILLO: So that one person, by applying one formula can achieve a different result than another person by applying another formula, but if they both come up with the aggregate gross return, is there anything wrong with it?

MR. VAN SCOYOC: Well, assuming that the allocators have followed proper principles of cost allocation, certainly there would be nothing wrong.

MR. PATTILLO: What I am looking for is help from you so just go right ahead. I am not expounding any viewpoint in this thing; I am looking for help, but it seems to me that provided, by applying one method or another method, you come up with the same aggregate then there is **no** anybody who can really say there is anything wrong with one method or the other.

MR. VAN SCOYOC: Well, certainly so far as the pipe line company is concerned it gets its total cost of service. It would get enough in the form of revenues to take care of all its operating expenses and provide them with a fair return. Now, the question then would come whether one class of customer has been charged too much and another class of customer too little.

MR. PATTILLO: That gets down to the equities between the customers, the class of



customers?

MR. VAN SCOYOC: Yes, pretty largely.

MR. PATTILLO: Well, if we are down there again returning to the distributing company which has had to buy at a 90 per cent load factor to get the best price, surely the customer that is buying firm stands to gain so long as he is not making any contribution to the purchaser of interruptible gas?

MR. VAN SCOYOC: Yes, so long as he is not subsidizing the purchaser of interruptible gas, I certainly would agree with you.

MR. PATTILLO: Now, I wish you would enlarge on that. When do you say a customer of a distributing company, buying on a firm basis, reaches the point that he is subsidizing the purchaser of interruptible gas?

MR. VAN SCOYOC: Well, there is no -- I do not think there is any fixed point where you can say positively except when the out-of-pocket costs -- or when the distributor is not recovering from the interruptible customer the out-of-pocket cost of that gas.

MR. PATTILLO: Yes. Well, we have got to that, we have agreed that the ascertaining of that out-of-pocket cost is a matter of judgment in the allocation?

MR. VAN SCOYOC: Well, of course, that



goes back to the principles of cost allocation that are employed, the methods of cost allocation that are employed, and I agree it is a matter of judgment.

MR. PATTILLO: Now, you obviously were with the Federal Power Commission when this Atlantic principle was laid down?

MR. VAN SCOYOC: Yes, sir, the Atlantic Seaboard case.

MR. PATTILLO: Now, it has been suggested to us that the Atlantic Seaboard principle was merely a question of expediency to resolve a situation where one group was pressing for a certain allocation of demand cost and the other group was pressing for an allocation towards commodity, and to resolve the thing you cut it down the middle?

MR. VAN SCOYOC: Well, that is not my recollection of it, let us put it that way.

MR. PATTILLO: Well, could you tell me -- and I do not want to embarrass you if you would rather not answer the question -- if that is the case just say so, but we are looking for help. Was there a principle followed in the Atlantic Seaboard formula?

MR. VAN SCOYOC: Well, the basic principle, I believe, was that the sales of gas on an annual basis were equally as important as the sales of gas during the peak period. In other words, the Commission took the position that to allocate



all of the fixed costs on the basis of a peak period did not produce a fair and equitable result.

MR. PATTILLO: It gave the interruptible boys a free ride?

MR. VAN SCOYOC: Yes, sir.

MR. PATTILLO: Right.

MR. VAN SCOYOC: And the Commission was also searching at that particular time for an allocation formula which would be easily applied or understandable and they hoped it would reduce the controversy which they faced in every pipe line rate case as to the method of allocation to be employed, and it certainly did assist in the matter.

MR. PATTILLO: Yes. Well, now, let me put this to you, and if you do not wish to answer it just say so: supposing the Canadian Government did create an energy board and supposing the energy board was seeking to lay down a formula and you were called in as a consultant, would you be prepared to recommend to the energy board that from your experience with the Federal Power Commission and seeing the formula work, that in your judgment the best formula that it could adopt would be the Atlantic Seaboard formula?

MR. VAN SCOYOC: Well, so far as I know the circumstances of your pipe line operations in Canada I see no reason why that method would not work equally as well as it has in the United States.



MR. PATTILLO: And you, in your judgment, in your personal opinion, you think the method has worked well in the United States?

MR. VAN SCOYOC: Yes, sir, I do.

MR. PATTILLO: Now, may I just speak to you a moment about a subject that is dear to Dr. Hardy's heart and that is the storage operation. Will you please tell me from your experience the significance of storage facilities as you understand it?

MR. VAN SCOYOC: Well, if storage is available, and with a large pipe line, the best type of economic storage is underground storage. That has the advantage of permitting a high load factor operation of a pipe line and at the same time greatly increasing the ability of that pipe line to supply peak demands during the winter months.

MR. PATTILLO: Now, do you think that it is possible to substitute storage for the sale of interruptible gas having regard to the high load factor, or must the two complement each other?



MR. VAN SCOYOC: Well, certain companies that have developed a good deal of storage in the United States have virtually gotten away entirely from the sale of interruptible gas, particularly for boiler fuel purposes.

MR. PATTILLO: Can you give us any illustrations?

MR. VAN SCOYOC: Yes. The Consolidated Natural System was one, and also the Columbia Gas system, the Tennessee --

MR. PATTILLO: You mean Columbia in Washington?

MR. VAN SCOYOC: No, I mean the Columbia Gas system, which is a large integrated company serving West Virginia, Ohio, Pennsylvania, New York. The Columbia system and also the Consolidated system are supplied by Tennessee Gas Transmission Company as one of their suppliers, and by virtue of the large underground storage of these two systems the Tennessee system operates at very close to maximum load factor the year round, and without making any sales itself of gas for interruptible purposes.

MR. J.J. McGRATH: Mr. Pattillo, may I add this, that the Columbia system and the Consolidated system, as a matter of fact, have a daily volumetric limitation on the amount of gas that can be sold for boiler fuel purposes and as to the particular purposes in the use of the underground storage



facilities which are available to those companies.

MR. PATTILLO: I was just going to ask you -- in the experience of either one of you does the cost of storage vis-a-vis the cost of the sale of interruptible gas enter into the problem at all?

MR. J.J. McGRATH: Well, it has been my experience that it has not, except that the pipeline companies would, in my opinion, prefer to have storage available because it does cut down on the capital expenditures that are required to loop lines and to take on additional markets. So you have a dollar saving there which would offset any profit they might make from interruptible sales on which they do make a profit.

MR. VAN SCOYOC: I would agree with what Mr. McGrath has said. The pipeline company, like Tennessee Gas Transmission Company, as I said, makes no interruptible sales; it does deliver tremendous amounts of gas to the Columbia and Consolidated systems. In addition, Tennessee has some storage projects of its own and is able to sell the gas which it stores in these fields in the wintertime, of course, at a much higher price than they could get for that gas.

MR. PATTILLO: Now, if I may change the subject and come to the subject which is developed by you, Mr. McGrath, of conservation and the phrase that is used on page 22 of the brief, which apparently



someone of us was responsible for -- "to be sold on an interruptible and/or dump basis in industry". Now, it doesn't follow, does it, that if you are selling interruptible gas you are selling dump gas?

MR. J.J. McGRATH: That is correct.

MR. PATTILLO: Now, when you come to the question of conservation, that must all be based on the end use that the gas is put to.

MR. J.J. McGRATH: That is correct -- economic conservation.

MR. PATTILLO: If you look upon gas as a commodity -- let's take the pipeline company that does not sell to an individual but only to a distributing company, that company is buying, transporting and selling a commodity; there is no difference in the 1,000 cubic feet of gas and the other 1,000 cubic feet.

MR. J.J. McGRATH: That is correct.

MR. PATTILLO: What I am concerned about in thinking of Canada perhaps exporting gas is that if the pipeline company -- take Westcoast, which is the only one which is presently doing it -- Westcoast is buying gas in the Peace River District in Northern Alberta, transporting it to the border and selling it, just as we have illustrated. Now, how, in your opinion, could the Government of Canada control the end use that was to be made by a distributing company in the United States of any one thousand cubic feet of



of that gas?

MR. J.J. McGRATH: Well, sir, if I may answer your question this way: if we were to reverse the flow, let us say, and assume the gas was flowing from the United States to Canada, the Federal Power Commission, I am sure, has power to impose conditions on the use to which the gas may be put. Now, the Canadian Government could so design the law that any export permit would be subject to such conditions as the regulatory body may see fit to impose and may expressly limit the use of the gas to which the United States may wish to put it.

MR. PATTILLO: How could you enforce that? The Canadian Government would only have control over Westcoast. Westcoast gets its gas to the border and it is taken over by Pacific Northwest, and Pacific Northwest delivers it to, say, Portland Coal and Coke and Portland Coal and Coke use it for one of the means which has been expressly prohibited. Now, how could the Canadian Government do anything about that?

MR. J.J. McGRATH: My good friend, Mr. Gueffroy of Portland Gas and Cokemay take offence at calling his company the Coal and Coke Company. But I would say the Canadian Government could impose the same obligation on Westcoast as the Federal Power Commission could impose on Westcoast or to cancel a permit or to terminate the deliveries under



the permit if the terms of the permit were violated. I have no doubt in saying that if there was permitted exportation to Canada and the permit limited use to which the gas may be put, and if the British Columbia Company were to use it in violation of the permit, the Federal Power Commission could terminate the permit.

THE CHAIRMAN: And isn't that about the fastest way for the two companies to get at each other's throat, from the point of view of international relations?

MR. J.J. McGRATH: Possibly, sir.

THE CHAIRMAN: Is it worth it?

MR. J.J. McGRATH: The gas that is going from Panhandle Eastern to the Union Gas Company -- I think it is Canada, in Ontario -- in the proceedings before the Federal Power Commission one of the points that were made was that the gas would not be used as boiler fuel and would not be put to a use which is frowned upon in the United States.

Now, as to whether it would have any adverse effects upon international relations to condition a certificate for a permit to buy use, I seriously question that it would, because if you are going to buy something you see and if someone violates that express limitation, I don't see how there could be any international animosity that could be created.

THE CHAIRMAN: And if Union Gas buys



gas from Trans-Canada and uses it as boiler fuel and switches that gas that is coming over from Panhandle, technically the Federal Power Commission could say that the Tennessee permit has gone because Union Gas has used it as boiler fuel. How can you keep an Mcf of gas separate from some other Mcf?

MR. J.J. McGRATH: It is very difficult, and you don't. But perhaps I misstated myself. There was no such limitation imposed on the permit granted to Panhandle Eastern; but in the proceedings before the Federal Power Commission much was made of the fact that Union would not use it for boiler fuel, but there would be no violation of the United States permit if Union were to take the United States gas and use it for boiler fuel; there is no express limitation in the permit as such.

But there is presently, as a matter of fact, a complaint before the Federal Power Commission by various distributors in the United States that the gas is needed by them for interruptible sales. It has been a subject for hearing before the Commission. The Commission has not acted upon it, but under the terms of the permit, which are well known to Union, that gas could be terminated or the export of that gas could be terminated by the Commission, and there will be some international feeling on that; I don't know.



MR. PATTILLO: Could I ask this, Mr. McGrath. This is my problem: if Westcoast, again to use this as an illustration, sold their gas to Pacific Northwest, and up to that stage there could be no criticism, and Westcoast took it and put it into its system; it bought gas also from El Paso and put its gas into the system; then they sell gas to Portland and Portland did permit it to be used to feed boilers, and that was an express prohibition of the Canadian Government, well, the Canadian Government couldn't criticise Westcoast because Westcoast had no control over it once it left its system. You agree that?

MR. J.J. McGRATH: That is correct.

MR. PATTILLO: Then Westcoast says, "We are going to be prohibited by the Canadian Government unless you, Pacific Northwest, do something about it". Pacific Northwest says, "We didn't use it improperly, and you have got a contract and you must live up to that contract in the full, and if you don't, we will sue you for damages". Westcoast say, "Well, perhaps you didn't but the Portland Company did, and you sold it to the Portland Company". Then Pacific Northwest says, "I will tell you what: you prove it was your gas that went into the burners and we will go along with you". Now, what do you do?

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MR. McGRATH: Frankly Mr. Pattillo you would have a very difficult time in separating El Paso from West Coast gas. It would be most difficult except on a volumetric basis to control the use that Portland or Pacific Northwest would make of the gas once it got into this system. If the physical design of the system was such, as I believe Pacific Northwest system is so set up at the present time, all of the gas used in Portland is West Coast gas. There is no question of co-mingling with El Paso gas in the Northwest State.

At that time, or at the present time at least you can identify with specificity the Canadian gas but you are absolutely correct that where you have a situation where the gas is co-mingled, except on a volumetric annual basis by measuring volumes that they have under contract from West Coast and the volumes they have under contract with Pacific - El Paso, you would have a difficult time knowing which gas was going into the boilers.

MR. PATTILLO: Then if I understand it, what you are really saying is a practical way to deal with this end result is to say to anyone applying for an export permit from Canada:

"We will permit you to export so long as any person buying from you or any of their



successors do not use any more than so many cubic feet for boiler fuel"?

MR. VAN SCOYOC: That could be a limitation, yes sir.

MR. PATTILLO: Well apart from that suggested method, is there any other that you know of?

MR. VAN SCOYOC: Just to specifically prohibit it without limitation to volume.

MR. J. A. McGRATH: If I may Mr. Pattillo I was in the Panhandle case which involved the exportation of gas to Union, and at that time Union came before the Federal Power Commission and fully laid before them its market estimates, and what the gas was going to be used for; so that turning it around, the Canadian Commission could perhaps not allow export unless the United States company came forward and showed them just what the gas was to be used for. That is what enabled the Federal Power Commission to say that the gas going to Union would not be used for boiler fuel and therefore it was a desirable type of sale.

MR. PATTILLO: Oh all right, but supposing they do that and then they did not observe it?

MR. J. A. McGRATH: At the present time some of Panhandle customers presently are involved,



I believe it is in the briefing stage or the Examiner may have it, at this time - -

MR. PATTILLO: You mean that is the first three years?

MR. J. A. McGRATH: No, these other customers are complaining not only that they need the gas but also that Union has taken Panhandle gas and had sold it to Trans-Canada for Trans-Canada to be in a position to expand its eastern market prior to receipt of Western Canadian gas.

Now as I say, the Commission has not passed upon that complaint as yet, but they definitely have intimated in their allegation to the Commission that Union in effect is going beyond the permission that they received from the Federal Power Commission. That is the permission given to Panhandle to make the sale. They are going beyond the type of sale that was authorized by the Commission.

MR. PATTILLO: Did the Commission authorize the type of sale, or did the Commission just authorize the export of gas?

MR. J. A. McGRATH: The Commission authorized certain volumes to be exported, which volumes were supported by a market estimate for specific areas and for specific use.

MR. PATTILLO: Now one of the things that puzzles me, Mr. McGrath, Mr. Jerome McGrath,



is when you are talking about conservation and social cost **unless** one has adequate storage facilities, how can one merely use natural gas for the superior market, that is, for the domestic user and so on at the cost that any-one can afford to pay?

MR. J. J. McGRATH: Of course, that is the question that has never really been answered because we have never had a situation where we could study the cost of a pipe line company operating solely for domestic or superior use purposes without storage, but the studies have shown that when you approach a load factor of 60 to 70 per cent, you have just about reached the point where the unit costs that are reduced from 60 to 70 per cent to 100 per cent have less and less effect on the cost of the gas.

Admittedly, we have always said that this is so, that operating at a low load factor will result in a higher cost of gas; somewhat higher cost of gas to the residential and commercial consumers, but it will assure to them a greater longevity to the supply.

Now the pipe line company I think has to have some interruptible load in order to take care of swings during the peak winter months. There has to be some flexibility in the pipe line system. I think we will all agree that this



has to be so, but the pipe line companies place too much emphasis on the high load factor operations and the point of profit to the company and to the consumer. Possibly 70 per cent load factor operation in our opinion is highly questionable.

MR. PATTILLO: Well let us take the storage situation now. Where are the storage fields in the United States?

MR. J. J. McGRATH: Primarily, the storage fields are located in West Virginia, Pennsylvania, Ohio, New York State. You have a very large field in Illinois. You have storage fields in Kentucky. You have underground storage in Montana, to a certain extent. You have underground storage, or at least they are working on underground storage in Iowa. I don't know whether there is any in Tennessee, but roughly the primary storage areas are in the Appalachian, so-called Appalachian areas of the United States.

MR. PATTILLO: So having regard to the amount of interruptible gas that is being sold in the States of which you have spoken, is the total capacity of the non-storage fields now in use in the States a factor at all?

MR. McGRATH: I am not sure I quite understand your question, but certain - -

MR. PATTILLO: What I am saying is this:



You have told us in your brief about the quantities of interruptible gas that is being sold in the States for only one use, and there may be much more. If you had all of your non-storage fields in operation, would you be able to handle anything like that volume?

MR. McGRATH: Well of course, I don't know what the potentials, ultimate potentials of storage are, but I believe that a very large measure of those interruptible sales could be stored in under-ground gas storage fields, and I think it would certainly take it down to a point where pipe lines could be operated at, say, 60 - 70 per cent load factor on interruptible sales; using the difference between, say, 70 and 100 per cent for storage purposes.

MR. PATTILLO: My problem in what you are saying is this: If I am a consumer of natural gas in my home, I want to get that product at the best possible price at the time, and I certainly want to get it at a price that is competitive with oil or coal. You agree with that?

MR. McGRATH: Yes, to a certain extent I will. Economics is one factor of it, of course, but you are buying a premium fuel for certain use; cooking, water heating, refrigeration, you are investing capital in the facilities, or the equipment that is going to be used to burn this



commodity. I think you have another factor that enters into it, and that is that you want to have the commodity available for use in those facilities without having to replace it within a relatively short time by substitute burning equipment or other fuels.

MR. PATTILLO: Mr. McGrath I think you should leave for Calgary and have a debate with Mr. Hillman who is the Counsel for the City of Calgary on what they should be paying for that gas out there. He seems to think that it should be obtained at a very, very low cost and you say it is a premium fuel; they should be prepared to pay premium prices for it?

MR. McGRATH: Yes sir.

MR. PATTILLO: Now have you ever given consideration, either of you gentlemen or the F. P. C. to what I might call a two price system? You were talking in here about the producing States where there was an increase in prices, and I gather, I just inferred that those increases in those States had not developed as rapidly as they had in the consuming State. Have you ever heard any thought being expressed that there should be a two price system; that the producing State, because it had the natural resource, should have a much lower price range than the consuming States?

MR. McGRATH: I have not.



MR. VAN SCOYOC: Not in my experience Mr. Pattillo, not any more than perhaps, just a suggestion.

MR. PATTILLO: There cannot be very much merit in the matter or it would have been canvassed, I would think, since 1938.

THE CHAIRMAN: Are Counsel in agreement on that last point?

MR. PATTILLO: We will hear from Mr. Frawley. I thought that this was Monday, and he had a good weekend I should get him aroused..

Those are all the questions I have Mr. Chairman.

THE CHAIRMAN: Thank you Mr. Pattillo. Mr. Frawley?

MR. FRAWLEY: Mr. Van Scoyoc I am not altogether clear as to the extent to which your F.P.C. has jurisdiction over the natural gas industry in the United States. You said this morning that if one of the large interstate transmission companies are selling gas direct to a consumer, the F.P.C. has no jurisdiction?

MR. VAN SCOYOC: Not so far as the rates are concerned.

MR. FRAWLEY: Well let me understand it, and let me give you an example just for that purpose of understanding it: Suppose that the Tennessee-Transmission Company carried gas from



Tennessee to the Atlantic Seaboard, sold gas to be used by a large electric utility in New Jersey, what control over that, and in what respect would the F.C.P. exercise any control over that transaction?

MR. VAN SCOYOC: They would have control over any facilities which were necessary in order to affect that sale, and whether or not it was in the public interest that such sale be made. They couldn't control the price.

MR. FRAWLEY: Well what considerations would enter into the determination of whether the public interest was suffering?

MR. VAN SCOYOC: Well one thing of course would be whether this particular transaction might be a burden on the customers, the distributing utilities buying gas for resale. Whether that gas couldn't be - whether there was not a demand for that gas for some other purpose, and the Commission has acted along on the line where the pipe line company intended to sell gas to a certain customer and the Commission decided that there was a better use for that gas to sales to other customers.

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MR. FRAWLEY: Might they say that if coal, for instance, was being used in that utility plant and was being displaced; would that consideration enter into the determination of the public interest?

MR. VAN SCOYOC: Yes, sir. At least, that is one of the authorities the Commission has. They have not exercised it to a great extent.

MR. J. J. McGRATH: They have the authority but they have not exercised it to any extent.

MR. FRAWLEY: That transaction is interstate commerce?

MR. VAN SCOYOC: Yes.

MR. FRAWLEY: But that alone is not sufficient?

MR. VAN SCOYOC: No, it has to be a sale for resale.

MR. FRAWLEY: Have you some specific provision in the Natural Gas Act that it has to be for resale before they can exercise jurisdiction over price?

MR. VAN SCOYOC: Right.

MR. FRAWLEY: So that, if we had this proposed national energy board exercising jurisdiction to see whether or not interruptible sales were being made in the public interest, we would be only asking something that would closely



approximate the jurisdiction now being exercised by the Federal Power Commission?

MR. VAN SCOYOC: Yes, sir. I think that is one of the defects in the Natural gas Act that the Commission does not have regulations over direct sales as well as sales for resale.

MR. FRAWLEY: Now, Mr. Van Scoyoc, I am going to be bold enough to ask you why you hold to the view that you expressed to Mr. Pattillo this morning that there should be regulation of the price of gas at the wellhead, or at least at the Saskatchewan gate if we are thinking about the Trans-Canada Company?

MR. VAN SCOYOC: Well, it is simply for this reason, Mr. Frawley, that unless you can regulate the price at which gas enters the line the regulation of the price at which it is sold at the other end of the line is not too effective.

MR. FRAWLEY: No. Now, at the moment there is no regulation of the wellhead price in Alberta, where most of the gas we are talking about is supposed to come from?

MR. VAN SCOYOC: I am sure you are better informed on that than I am.

MR. FRAWLEY: I am just making a statement that there is no regulation of that.

Now, I am asking you why that situation could not continue without any harm being done to



the principle that there should be some regulation over the interruptible sales in Eastern Canada, or anywhere outside of Alberta. I just want your view because I have respect for your experience and your view.

MR. VAN SCOYOC: I am not quite sure that I understand your question, Mr. Frawley. In other words, are you asking me why you should regulate the price at which interruptible gas is sold?

MR. FRAWLEY: No. Let me say that again. I am asking you to accept the present situation: no regulation of the price of gas at the wellhead, so that the owner of the gas and the man who wants to buy it, which is the pipe line company -- and perhaps, we hope, two pipe line companies wanting to buy it -- let them arrive at the price just as the man who has cattle ranging out in the foothills of Alberta makes his price with the man who wants to buy and sends them to St. Paul or Winnipeg or wherever it is. With that starting point, if you accept that for a moment, why would that interfere with the desirability of regulating and exercising some control over what gas went into interruptible sales in the consuming provinces?

MR. VAN SCOYOC: I do not think it would interfere with it, but I am afraid I do not quite



understand what you are driving at.

MR. FRAWLEY: I shall put it to you again. Let us assume that you leave the wellhead situation as it is.

MR. VAN SCOYOC: Yes.

MR. FRAWLEY: But that we do want to see that not too much of our gas is going at below cost. I want to discuss what that means -- below cost. We are anxious to see that, not necessarily not any, but certainly not too much of our gas is being sold at below cost. We have those two situations. Is there anything irreconcilable in those two situations: freedom to sell your gas at whatever you can get from the pipe line company on the one hand, but regulation at the other end of the pipe line to see that too much of it is not going at below cost? Is that an acceptable situation to you, or if you have one must you have the other?

MR. HALL: It is acceptable to National Coal.

MR. FRAWLEY: I am glad you have an independent-minded man with you.

MR. PATTILLO: He does not think you would sell much gas, in other words.

MR. FRAWLEY: Mr. Pattillo says he does not think he would sell much gas. Would that enter into that?



MR. HALL: Of whom are you asking that question?

MR. FRAWLEY: I am still asking the question of your Washington consultant.

MR. VAN SCOYOC: If the amount which the pipe line company would pay the independent producer for gas would have to be taken into account in fixing the price at which the gas would be sold at the other end of the line, or at least it should under any proper method of rate-making, and of course on that basis the higher the field price, and assuming proper allocation methods were employed, the higher would be the price of interruptible gas on the market.

MR. FRAWLEY: Yes. Well, I put it to you: could there be -- and this is perhaps the blunt way to put it -- could there be regulation with respect to the proper proportion between sales of firm and sales of interruptible gas? Could there be that in Ontario, to be specific, without any regulation to fix the price at the wellhead?

MR. VAN SCOYOC: I am very sure that there could be that situation. The only view I expressed earlier was that I felt regulation of the price of gas entering the line was a necessary part of making the regulation of natural gas rates to the ultimate consumer effective.



MR. FRAWLEY: Well, could you do this, as a consultant, by using the F.P.C. formula? Could you take a specific sale? Now, I want to make a few assumptions with you. Let us assume that the Northern Ontario Natural Gas Company is selling to the International Nickel Company and its huge refinery operations in Northern Ontario. Let us assume that they are selling that on some interruptible basis. I do not know whether they are or not, but assume for the moment that they are. Could you determine whether the sale of that gas and that price that Northern Ontario Natural Gas is getting from International Nickel was or was not below cost?

MR. VAN SCOYOC: Yes, in my own judgment of it, based on the application of the Atlantic Seaboard, the F.P.C. formula.

MR. FRAWLEY: In other words, it would simply depend on the proper allocation of the cost of service?

MR. VAN SCOYOC: Yes, sir.

MR. FRAWLEY: Having done that, you could say whether or not it was just at cost, below cost or above cost?

MR. VAN SCOYOC: Yes, sir.

MR. FRAWLEY: And, similarly, you could do that with regard to any given sales?

MR. VAN SCOYOC: With the factual data,



you could do that.

MR. FRAWLEY: That is what I mean -- if you were given the necessary basic data you could do that. What you have to determine is whether all the elements of cost had been fairly allocated between firm sales and interruptible sales?

MR. VAN SCOYOC: That is right.

MR. FRAWLEY: Now, I am quite interested in what you have to say about the relative importance of storage and interruptible sales. Would you say that a natural gas transmission line of the size of Trans-Canada Pipe Line, carrying gas or proposing to carry gas from Alberta to Montreal, should have adequate storage?

MR. VAN SCOYOC: I think storage would undoubtedly be beneficial to the ultimate consumers of gas in Eastern Canada. It would, of course, make available a great deal more gas to meet the winter peaks than if the line had no storage.

MR. FRAWLEY: Is this a fair statement, that without storage, without adequate storage itself, as the long line, does it have to resort to interruptible sales to maintain a proper load factor?

MR. VAN SCOYOC: Apparently that is its programme, yes, sir.

MR. FRAWLEY: Could they achieve the same objective by having adequate storage?



MR. VAN SCOYOC: Within limits. We have to make a study of the individual problems inherent in furnishing storage for a project as big as Trans-Canada.

MR. FRAWLEY: As Mr. McGrath said a few moments ago, a transmission line has to have some interruptible sales?

MR. VAN SCOYOC: It has to have some flexibility to meet the varying peak requirements of its customers.

MR. FRAWLEY: What I am examining is the statement we have had on the record that Trans-Canada's interruptible sales are running one-third or more of its volume. That is the situation I am concerned with. Would you say that, if it had adequate storage, it might be able to cut down the volume of its interruptible sales?

THE CHAIRMAN: Mr. Frawley, do you think that is a proper question to put to this witness? Have you ever been retained by Trans-Canada, Mr. Van Scoyoc?

MR. VAN SCOYOC: No, sir.

THE CHAIRMAN: I do not think you should ask this witness to express an opinion with respect to Trans-Canada's policies, Mr. Frawley.

MR. FRAWLEY: Probably not. I am in your hands, Mr. Chairman. You are aware, of course, that we have taken a very definite stand on



this question of interruptible gas.

MR. PATTILLO: That is not the only thing.

MR. FRAWLEY: At the moment we are certainly only endeavouring to find out from well-informed people like Mr. Van Scoyoc and Mr. McGrath what the experience is in the United States. I very respectfully suggest that it is important, sir, to find out whether or not Trans-Canada should have storage, whether or not it is sufficient for its distributors, to whom they sell, to have storage. This is all leading up to my submission to this Commission that we should have federal regulation over the sales of interruptible gas to see that the public interest does not suffer. I do not want to go too far ---

THE CHAIRMAN: Let me put it another way. I think we went into the question of Trans-Canada's storage last week in Toronto, or the week before, when we had the government experts and the Ontario Fuel Board people and Trans-Canada themselves. I appreciate what you are leading up to, and I think that you could properly ask a question, you could ask this expert witness a question quite properly as to whether or not a trunk transmission gas line of a certain capacity, in his opinion, should have a certain kind of storage if such storage is available. We went over that question of storage, and it is a question



whether it is available.

MR. FRAWLEY: Let me put it this way. If it is not available, and then we go to interruptible sales, I want to be sure that those sales are not at below cost.

THE CHAIRMAN: Trans-Canada, in their sworn testimony before us, said that it was their policy to make no interruptible sales.

MR. FRAWLEY: I know, but that has to be faced full on sooner or later. Trans-Canada makes no interruptible sales, but Trans-Canada has negotiated a contract with Northern Ontario Natural, which makes interruptible sales. Trans-Canada makes a contract with Consumers, which makes interruptible sales. Surely then Trans-Canada is hiding its head in the sand by saying, "I make no interruptible sales".

THE CHAIRMAN: If that pipe line were reversed would you not assert Alberta jurisdiction over those interruptible sales? If the flow came from Eastern Canada to Alberta?

MR. FRAWLEY: We in Alberta would assert control over those sales.

THE CHAIRMAN: That is what I mean. It is not a matter of federal jurisdiction. That sale is made by Trans-Canada to an Ontario distributor. It comes within the jurisdiction of the Province of Ontario.



MR. FRAWLEY: That is right. Apropos of that, let me recall that Mr. Crozier professed that he had nothing to do with the contract between Trans-Canada and Consumers, and frankly I was led to investigate the matter further, in view of Mr. Crozier's attitude that he did not think he had anything to do with the contracts between Trans-Canada and Consumers. It was that that encouraged me to pursue the matter.

THE CHAIRMAN: Are you sure of that?

MR. FRAWLEY: It may not be ---

THE CHAIRMAN: Ontario's position, ever since the concept of Trans-Canada, as evidenced by the copies of correspondence between the Prime Minister and Mr. Howe, filed by the Province of Ontario with us, in which the Prime Minister asked Mr. Howe to have regulation of the price at which Trans-Canada sold its gas at the take-off point, or the gate valve, whatever you want to call it, to the Ontario distributor.

MR. FRAWLEY: You are absolutely right about that. I was referring to the evidence of Mr. Crozier, and again from my memory it seems to me that Mr. Crozier took the position that he did not have anything to do with that.

THE CHAIRMAN: No, he is accepting the figure at present.

MR. FRAWLEY: That was the starting



point, the figure that had been regulated. I was really dealing with the suggestion that we have heard over and over again that Trans-Canada is not engaged in interruptible sales. With great respect, I say that is not looking through the matter sufficiently.

THE CHAIRMAN: Mr. Frawley, I think we have got into quite a constitutional problem. It is a question, I think, in the minds of the Commission whether any such sale in any event is not a matter of a sale within the province and therefore one wholly subject to provincial jurisdiction over which the Federal Government would have no jurisdiction.



MR. FRAWLEY: That is right. My position is, first, there should be some control over the revenues: federal control is perhaps, we think, a little better than provincial control but in any event provincial control is better than no control at all.

THE CHAIRMAN: I think it is unfair to involve this witness who is kind enough to come from Washington here in one of our, shall I say, constitutional problems.

MR. FRAWLEY: That is true, sir. I was endeavouring, to use a colloquialism, pick the brains of an independent man like Mr. Van Scoyoc while he is here. I do not want to transgress the bounds of propriety but he does have opinions on these matters which I think would help the Commission.

MR. PATTILLO: I do think -- I do not want you to sit down, Mr. Frawley, because I get on my feet.

MR. FRAWLEY: I always sit down when other counsel are addressing the Court.

MR. PATTILLO: I do suggest perhaps we could have it cleared up by Mr. Frawley now: if the Province of Alberta takes the position that the Federal Government should be regulating the price paid by the distributing company at the take-off point then I assume that he is saying, for the same reason, they should be regulating the price paid by the pipeline company at the take-in point.



THE CHAIRMAN: I think that would be unfair to put Mr. Frawley in that position.

MR. FRAWLEY: I could not answer without instruction.

THE CHAIRMAN: On the advice of counsel I suggest you not answer, Mr. Frawley.

MR. FRAWLEY: Fear not, Mr. Chairman. Mr. Van Scoyoc, how does a natural gas pipeline transmission company make its profits to pay its dividends?

MR. VAN SCOYOC: Out of the return which it receives on the rate base; and, of course, the amount of revenues that they receive in relation to their costs over the return, of course, determines the amount of return that they will receive.

MR. FRAWLEY: What intrigues me is that the purchase price of the gas is, under the accepted formula, charged in as an expense just as wages or materials of any kind.

MR. VAN SCOYOC: That is correct, sir.

MR. FRAWLEY: That is a matter of -- well, it is an expedient way to dispose of it?

MR. VAN SCOYOC: I hardly know of any other way to do it.

MR. FRAWLEY: In other words, they are not buying the gas low and selling it high?

MR. VAN SCOYOC: No, they make no profit on the gas itself.



MR. FRAWLEY: That is what I was coming to: they make no profit on the sale of the gas, they buy it in Alberta for 10 3/4 cents -- My friend, Mr. Leyton corrects me when I quote that price but that is the one supporting price and they sell it presumably after it goes through a couple of distributors in the streets of Ottawa for \$1.30 but that is not simply a mark-up on the purchase price of the gas?

MR. VAN SCOYOC: It would not be under regulation, no.

MR. FRAWLEY: There is sort of a mark-up to the cost of service, the mark-up being the rate of return?

MR. VAN SCOYOC: Yes, sir.

MR. FRAWLEY: That may be one way of describing it, the mark-up comes in adding something to their disbursements, to their expenses?

MR. VAN SCOYOC: Right.

MR. FRAWLEY: You do not know about the price of coal fixed at the mine anywhere in the United States, do you?

MR. VAN SCOYOC: I do not know of any price fixing -- by government, at least.

MR. FRAWLEY: Now, would the ideal situation be that all sales were made on a firm basis?

MR. VAN SCOYOC: Well, it certainly would be if it was possible; it would certainly be ideal



but it is not possible, however, simply because such a large share of the consumption of gas depends on the weather.

MR. FRAWLEY: Now, Mr. Van Scoyoc, you did say or perhaps Mr. McGrath, you spoke about sales of gas for superior purposes for refrigerators and for heating water and so on and I wondered why you excluded ordinary space heating in a home: is that not accepted as superior use?

MR. J.J. McGRATH: Yes.

MR. FRAWLEY: And an institution, hospitals and so on?

MR. J.J. McGRATH: Volumetrically, no.

MR. FRAWLEY: You would not regard it as a superior purpose to have gas sold to a hospital for space heating?

MR. J.J. McGRATH: My experience has been when you get into a large installation such as that it is very largely a question of economics whereas in the home it is very largely a question of economics plus convenience.

MR. FRAWLEY: That is why gas has displaced coal, not entirely from the standpoint of price but convenience and methods of handling and so on?

MR. J.J. McGRATH: Yes.

MR. FRAWLEY: Speaking of the damage that you people do not want to have come to the coal mines of the United States, I suppose you are



very well aware that natural gas has just about ruined the coal industry in Western Canada?

MR. J.J. McGRATH: I do not know that to be a fact.

MR. FRAWLEY: Well, Mr. Hall is aware of the fact that certainly is one of the problems we have and you had made a case for them; you are seeking to keep them out of trouble and you must be aware that the coal mining population of Alberta have suffered from the inroads of natural gas.

MR. HALL: I have been so advised by the Western co-operative representatives and we share a common sympathy with them, I might say.

MR. FRAWLEY: Now, Mr. Van Scoyoc, is there any relationship between large sales -- would you say, one-third of the sales, by volume, would be a considerable sale of interruptible gas? I have no idea of these percentages: is that considerable or otherwise?

MR. VAN SCOYOC: Well, thinking over some of the pipeline companies of **United States** I would say that that is probably in fact the upper range, one-third.

MR. FRAWLEY: I was very interested in having you tell the Commission that the Tennessee Gas Transmission Line had no interruptible sales. Now, is that similar to Trans-Canada? Do their customers have interruptible sales?



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MR. VAN SCOYOC: Yes, I believe they have a number of customers for interruptible sales.

MR. FRAWLEY: Some of the gas that is sold to the customers go under boilers?

MR. VAN SCOYOC: Yes, sir.

MR. FRAWLEY: Is it also used industrially to upgrade ores and things of that kind?

MR. VAN SCOYOC: I am sure some of the industry use natural gas there, the Tennessee system use it for high grade industrial use.

MR. HALL: On a firm basis.

MR. FRAWLEY: Not on an interruptible basis?

MR. HALL: No.

MR. FRAWLEY: Now, I understand Mr. McGrath to say when the FPC was granting a permit to Panhandle to export gas into Western Ontario for Union that it was virtually a condition, what amounted to a condition that it would not be used under boilers in Canada.

MR. McGRATH: I think that was the implication in the Commission's opinion granting the permit, there was no specific condition on the permit limiting the use to which the gas could be put.

MR. FRAWLEY: I was interested in the way you explained that before because of the cases represented before the Federal Power Commission that none of it was going to go under boilers and I rather thought that was a factor entering into the granting of the permit



by the Federal Power Commission.

MR. J.J. McGRATH: It definitely was.

MR. FRAWLEY: That being so, what is the FPC doing about the gas -- coming back to the illustration we had a moment ago -- which Tennessee gas is selling to the Columbia system and is going under boilers by sales to Columbia?

MR. J.J. McGRATH: I do not know if your ultimate question would be, what is the FPC doing about protecting the use of gas for boiler fuel in the United States?

MR. FRAWLEY: That is it.

MR. J.J. McGRATH: Well, frankly, in the two illustrations you have picked out the Tennessee Gas Transmission Company and the Columbia Gas system, they are two pipelines that by the nature of their operations do not sell large volumes of boiler fuel because, as Mr. Van Scoyoc said earlier, both these companies have substantial storage facilities and they make a fair, actually good utilization of the storage that is available to them. The interruptible sales that are made by the Tennessee Gas Transmission Company to their distributors are made by their distributors. Actually, I am trying to recollect the interruptible sales that are made for the most part -- East Tennessee is a company that does make some interruptible sales from gas purchased from Tennessee.



Percentagewise I would say the boiler fuel sales of the Tennessee line are relatively low in comparison with other pipeline companies.

MR. FRAWLEY: In other words, it would come within what you describe as a flexibility.

MR. J.J. McGRATH: Yes, but they really get all the flexibility out of their storage. I do not think they have too much in interruptible sales.



MR. FRAWLEY: In other words, it would come to what you have described as is necessary for flexibility.

MR. J.J. McGRATH: Yes, but they really get their flexibility out of the storage; don't think they figure it on interruptible sales.

MR. FRAWLEY: And I take it that there are other areas in the United States where gas is being sold for use under boilers quite extensively and the Federal Power Commission hasn't done anything about it.

MR. J.J. McGRATH: Yes, that is what we say.

MR. FRAWLEY: Has the Federal Power Commission jurisdiction to do something about it?

MR. J.J. McGRATH: They have.

MR. FRAWLEY: And would you care to express an opinion as to why they are not?

MR. J.J. McGRATH: Because I think it is the attitude of the Commission itself. I think you can see a definite pattern through the years. If you were to trace the history of the Natural Gas Act and the various reports of Congress and so forth, probably you will find that in the early days of the Commission they were very conscious of the responsibilities they had for controlling the end use of gas and to see or attempt to see that the gas was utilized in such a way as to conserve its use.



However, as the complexion, the membership of the Commission changed, the attitude of the various Commissioners **has** changed, and we have swung around to a situation now that, although they have authority to control the end use, they have not seen fit to do so. In my opinion, it is the personal attitude of the Commissioners as to what they want to do or do not want to do.

I might add that there is no specific language in the Natural Gas Act requiring the Commission to impose end use control, but it is clear from the legislative history of the Act and the judicial interpretations that the Commission does have the power, and to deal with certificates of public convenience, matters of conservation are material.

MR. FRAWLEY: I understand that you have already said that the Federal Power Commission has jurisdiction over the wellhead price of gas which moves into Interstate Commerce.

MR. J.J. McGRATH: Yes, for resale.

MR. FRAWLEY: Yes, for resale. That is a peculiar twist to it, but that is the result of the wording of the statute.

MR. J.J. McGRATH: Yes.

MR. FRAWLEY: Now, we were told that the Federal Power Commission were very reluctant in entering upon that jurisdiction to fix and regulate



wellhead prices. Is that a fact? Have they been reluctant to do that?

MR. J.J. McGRATH: Yes, I think that is a fact.

MR. FRAWLEY: We have been told that they have not yet started.

MR. J.J. McGRATH: No, that is not a fact. They have regulated the price of gas at the wellhead to a certain extent. They have not, so far as I know, prescribed any formula for the setting of a price at the wellhead. Mr. Van Scoyoc is more familiar with that than I am, and perhaps he could speak on that, but they have assumed jurisdiction over the wellhead sale of gas from the date that the Phillips case was handed down in 1954.

MR. VAN SCOYOC: I may add that while a Commission in a few minor cases have fixed the wellhead price, they have not as yet adopted a policy as to whether they are going to use the cost basis or the wellhead basis. There are a number of large producer cases in various stages of processing before the Commission at this time, and eventually those cases will be decided by the Commission. There probably will be litigation and probably two or three years down the road we will know what regulation the Commission will employ.

MR. FRAWLEY: Well, if it is a fair



question, what has been the cause of the reluctance of the Federal Power Commission to go into the regulation of gas produced in Canada, say?

MR. VAN SCOYOC: I think that comes down to a question of regulatory philosophy. When the Phillips case was first commenced you had a divided attitude; part of them felt they should have jurisdiction over wellhead sales and part of them didn't, and finally it went up to the Supreme Court and the Supreme Court said that the Federal Power Commission has jurisdiction.

In the meantime, there was a change of administration, change of commissioners, and the new commissioners were reluctant to proceed with the regulation of producers, but they had no alternative.

MR. HALL: I may add that one of the understandable reasons why the Federal Power Commission has been reluctant to enter this field of regulation is that the Natural Gas Act, Section 1(b) says that it will not apply to the production and gathering of natural gas. I would not want to make an adverse comment on the Supreme Court, not in Canada, anyway, but, on the other hand, it does illustrate perhaps a change also in the minds and hearts of our Supreme Court. Almost anyone reading the Natural Gas Act, any layman, most lawyers, would say that it is not designed or meant to cover the production and gathering of natural gas. I believe that would



certainly contribute to the Commission's reluctance.

MR. FRAWLEY: For my part, I hope they continue to be so reluctant that they don't enter into it at all.

MR. VAN SCOYOC: Let me ask this question: is there any relationship between the sales of interruptible gas in considerable volume, one-third volume, and the ability of that transmission line to pay the highest possible price, other things being equal, at the wellhead?

MR. VAN SCOYOC: I believe there is bound to be some relationship. If the price at which the pipeline company can sell interruptible gas is at a certain ceiling, because of the competitive fuel situation, then that price less the cost of transmission is bound to have some effect on the amount that can be paid for gas which is sold for interruptible purposes. The difficulty we have in the United States on that question is that pipeline companies have continued to pay higher and higher prices for gas in the field, but they want to load all of those increases in the field cost of gas onto the firm customers; they do not want to spread any part of that or, if any part, only a minor part on the interruptible business, and they want the domestic customers in effect to subsidize interruptible sales.

MR. FRAWLEY: In other words, what you are



saying is that they don't agree what they are selling on an interruptible basis is a low price; because of the way they allocate various factors they say they are selling at a good price.

MR. VAN SCOYOC: Yes.

MR. FRAWLEY: And it comes to an unjust and biased view of those costs.

MR. VAN SCOYOC: Yes.

MR. HALL: In talking about the low cost of sales in the United States, most people who would listen to the argument confuse the term "low cost" with sales at a loss, and the two things bear no relationship whatsoever to each other, and I think that is the point.

MR. FRAWLEY: Now, Mr. Van Scoyoc, can a good load factor be achieved if the transmission company has adequate storage?

MR. VAN SCOYOC: Oh, yes, yes.



MR. FRAWLEY: And a good load factor is the principal objective of the natural gas transmission line?

MR. VAN SCOYOC: At least that is one of the major objectives, yes sir.

MR. FRAWLEY: I suppose the ideal situation would be that all sales would be at space heating, at a space heating basis or what is commonly called a firm base?

MR. VAN SCOYOC: Yes, if you could. If you had 100 per cent load factor, or close to 100 per cent load factor, by virtue of the fact that you were making firm sales that would be an ideal situation.

MR. FRAWLEY: I suppose it is true to suppose, Mr. McGrath has just told me that he does not agree that it is proper, it is a proper social use for natural gas to put it under the boilers of a big hospital, we will say, but if you did that on a firm basis then you wouldn't have any problem of a disproportionate use of firm against interruptible?

MR. VAN SCOYOC: That problem would not be involved sir.

MR. FRAWLEY: So then you come back to a second consideration which I understand that Mr. McGrath is advancing - probably you are too - that there is a second consideration and that is

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that you should not be using this premium fuel for such use as to keep a huge hospital or a hotel the size of the Queen Elizabeth warm?

MR. VAN SCOYOC: If you are asking me that question, my phase of it deals with the rate making aspect and not the conservation part of the presentation.

MR. FRAWLEY: That is Mr. McGrath, conservation. He doesn't think that that is a proper use of the gas to use it to heat a building the size of the Queen Elizabeth Hotel?

MR. J. J. McGRATH: That is correct. I say that it is a question of economics.

MR. FRAWLEY: Would you think that the determination of those matters, that is conservation as you see it, you think that a function of the Federal agency?

MR. McGRATH: Yes sir, but definitely.

THE CHAIRMAN: Would that be possible in Canada, Mr. Frawley?

MR. FRAWLEY: Would it be - ?

THE CHAIRMAN: Possible in Canada?

MR. FRAWLEY: I would hope it would not be ever. .

You said this morning Mr. Van Scoyoc that the transportation is subject to Federal Power Commission jurisdiction. The transportation. Just what did you mean by that?



MR. VAN SCOYOC: Well there are certain cases where - not very many of them at the present time - where an ultimate consumer will make a contract directly with a producer. The producer and the ultimate consumer will then make arrangements with the pipe line company for the transportation of that gas; the gas not being owned at any time by the pipe line company. That transportation rate, being transported interstate commerce is subject to regulation by the Federal Power Commission.

MR. FRAWLEY: Like the jurisdiction of-

MR. VAN SCOYOC: Like the railroads.

MR. FRAWLEY: Oh, I see. Now will you tell me this: Under what conditions would you say that the producer of interruptible gas is being subsidized by - my interest lies in the producer of the gas in Alberta - would you give me in your view the relationship between the price which the producer gets at the well-head and the use of that gas in Ontario or Quebec in interruptible sales? What if any relationship exists there?

MR. VAN SCOYOC: If the price at which the gas was sold for ultimate consumption was less than the amount paid for that gas in the field to the producer, plus a fair allowance of the transportation cost, then I believe it would be subsidized at the expense of some other consumer. of gas supplied by that pipe line company; assuming



the pipe line company over-all received a fair rate of return.

MR. FRAWLEY: In your terminology do you have the expression "dump gas" or "dump basis"?

MR. VAN SCOYOC: Yes, that is a term which has been applied to sales - as, if, and when characteristic. In other words, may be discontinued immediately at the option of the seller and normally at whatever price the seller can get for it.

MR. FRAWLEY: And that is sold at a comparatively low price?

MR. VAN SCOYOC: Normally it is sold substantially below firm gas and somewhat below some interruptible gas.

MR. FRAWLEY: That is the sort of thing that should not be allowed to obtain in your view.

MR. VAN SCOYOC: Well you mean as to making those type of sales?

MR. FRAWLEY: Yes?

MR. VAN SCOYOC: Well I am not taking a position that all interruptible sales are bad per se. I am saying that they should carry their share of the cost and that operation should not be subsidized by other classes of customers.

MR. FRAWLEY: It would be fair to say if you were making comparisons, that that would be



the least desirable sort of interruptible sale?

MR. VAN SCOYOC: Well I don' know,
"least desirable" from whose point of view?

MR. FRAWLEY: From the standpoint of
the danger of diluting the gross revenue of the
transmission company?

MR. VAN SCOYOC: Well yes, from that
point of view certainly because the revenue re-
ceived per unit is less than any other.

MR. FRAWLEY: Would adequate storage
facilities minimize the necessity to make those
kind of sales?

MR. VAN SCOYOC: Yes sir.

MR. FRAWLEY: Thank you Mr. Chairman.

MR. CHAIRMAN: Thank you Mr. Frawley.

Mr. Britnell?

MR. COMMISSIONER BRITNELL: Thank you
Mr. Chairman. Mr. Van Scoyoc, there is just one
point I would like to clear up, that I am not very
clear on just now. Do I understand that Tennessee
Transmission makes no sales of interruptible gas
directly?

MR. VAN SCOYOC: Not directly, no sir.

MR. COMMISSIONER BRITNELL: But the
companies, the distributing companies which are
the customers of Tennessee Transmission do make
sales of interruptible?

MR. VAN SCOYOC: Some of their customers
do.



MR. COMMISSIONER BRITNELL: Or some.

MR. VAN SCOYOC: I would say it is comparatively minor considering the total volume of gas which flows through the Tennessee system.

MR. COMMISSIONER BRITNELL: Do all or most of the other gas transmission companies make direct sales of interruptible gas to their companies, or their customers and the distributing companies which they serve?

MR. VAN SCOYOC: I would say the majority of them do make some direct sales, yes sir.

MR. COMMISSIONER BRITNELL: Well what I am trying to get at in getting those facts is: Is there any significance in the practice followed by Tennessee of not making any sales of interruptible directly to his customers?

MR. VAN SCOYOC: Well it would be a company policy first of all. I mean they have a choice, assuming markets are available. I think one of the factors which has probably deterred them from getting into that business is the fact that they are able to achieve a high load factor operation by virtue of the fact that there two largest customers, that is the Consolidated natural system and the Columbia gas system have large storage projects and are able to take during the summertime their gas at 100 per cent load factor.



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MR. COMMISSIONER BRITNELL: So that under the circumstances it is quite possible in all the circumstances, including these storage factors, it would not be present in all the other cases or all the other transmission companies?

MR. VAN SCOYOC: That is right.

MR. COMMISSIONER BRITNELL: Would it be fair to assume that under these circumstances the well-head price might be somewhat higher, or alternately the cost to the ultimate consumer be somewhat lower than would otherwise be the case?

MR. VAN SCOYOC: Well the well-head price itself has been affected of course by the tremendous increase in the demand for gas. I am not sure I got the rest of your question.



MR. COMMISSIONER BRITNELL: Whether there would be a gain to the ultimate consumer from this practice.

MR. VAN SCOYOC: The practice of Tennessee?

MR. COMMISSIONER BRITNELL: Yes.

MR. VAN SCOYOC: Certainly it is again to the consumer. One thing it has achieved is that it has been able to permit the expansion of the house heating business in the market areas served by gas from Tennessee. This has made a great deal more gas available for house heating purposes, and of course, by having 100 per cent load factor operation of the line, the unit costs of the line have been reduced.

MR. BRITNELL: Thank you, Mr. Van Scoyoc.

MR. COMMISSIONER HOWLAND: Mr. Van Scoyoc, just a matter of fact. In the regulation of wellhead prices in the United States, if the transmission line itself produces gas and incorporates that gas in its price structure, is there any regulation of that price?

MR. VAN SCOYOC: Yes. There is a little history to that. Up till 1954 the Commission regulated the production of the pipeline producers on a cost basis. In other words, their cost of wells and gathering lines went into the rate base, and they were allowed to recover their cost of operation,



treated exactly the same way as any other facility. In 1954 the Commission in the Panhandle case departed from that policy and used what was termed the weighted average field price. That case went to Court, and the Court of Appeals for the District of Columbia in the case known as the City of Detroit case held that the Commission could not depart from the cost basis of regulation unless they justified giving the companies anything above cost, and could not just use a different method without justifying it, and remanded the case to the Commission. The Commission has not taken any further action upon that case. The whole matter is in a state of flux at the moment.

MR. COMMISSIONER HOWLAND: If a transmission company is partially owned by a producer of gas, would that also come under the same category?

MR. VAN SCOYOC: Yes, sir. The Commission, as I believe I mentioned this morning, has scrutinized all transactions between affiliates, and where there is a producer affiliate it has in the past only been allowed to go into the cost of gas to the pipeline company, the cost of production experienced by the affiliate, including a fair rate of return on any of its facilities devoted to the production operation.

MR. COMMISSIONER HOWLAND: Thank you.

MR. COMMISSIONER LADNER: Mr. Van Scoyoc, I would like to ask you two questions that I do not think have been raised here. Do you know whether or



not gas passing through the United States, as in the case of the Interprovincial Pipe Line is in bond, and whether it is subject to customs duty?

MR. VAN SCOYOC: I do not know, sir.

MR. COMMISSIONER LADNER: I should say "oil". I said "gas". It should be "oil".

MR. VAN SCOYOC: No, sir, I am not familiar with the oil pipeline operations.

MR. COMMISSIONER LADNER: Whether or not that operation within the United States is subject to the income tax laws of the United States?

MR. VAN SCOYOC: I am sure that anyone who makes any profit in the United States is subject to the income tax laws and I am certain that the oil pipelines will have to pay a tax if they make a profit in the United States.

MR. COMMISSIONER LADNER: Even though the oil was passing through in bond and it was just a transit performance?

MR. VAN SCOYOC: The profit, of course, for a United States oil pipeline would be derived entirely from a return on the rate base, the cost of its facilities, and I do not believe the question of whether or not the oil went through any bond or whether it was subject to customs would have any effect on the profit. The profit would come only through a return on the rate base.

MR. COMMISSIONER LADNER: Thank you.



MR. COMMISSIONER HARDY: Mr. McGrath, on this storage business again, I think we have to recognize that you cannot go out and create the storage at the end of a pipeline. It is perhaps a unique situation that you have in which you have depleted oil fields or gas fields near your consumer market.

MR. J.J. McGRATH: That is not exactly correct.

MR. COMMISSIONER HARDY: How else can you store it?

MR. J.J. McGRATH: For example take the Louisville Gas and Electric Company, which is a distributor in Kentucky. They have developed storage fields in an area where the substrata of the earth is such that it can contain gas without gas escaping. They have what is called the water bubble down there, where the gas is injected into the various segments of the earth that they happen to be using and, by the expansion of the gas pushing the water against the side of this impervious rock, they are able to contain gas in what they call the gas bubble, or the water bubble. That is used to store gas during the summer months. It was not a depleted gas or oil field.

MR. COMMISSIONER HARDY: So that conceivably you could develop that sort of storage in any permeable strata that would hold gas?



MR. J.J. McGRATH: Yes. It was an impervious cap rock or something where it was susceptible to storage.

MR. COMMISSIONER HARDY: Would I not be right in assuming that the amount of storage utilized in the United States at the present time of that type would be a very small percentage?

MR. J.J. McGRATH: That is correct, but one of the largest underground gas storage projects is the so-called Herscher Dome in Illinois, which is a gas bubble and one of the largest single underground storage fields in the United States that I know of. They have had trouble with it, but it is still delivering, to my knowledge, about 400 million cubic feet of gas a day during the winter peak periods, which is a substantial amount of gas for any pipeline.

MR. COMMISSIONER HARDY: The problem we have been concerning ourselves with in our discussions in the Commission here has been the available storage fields in Ontario, where there are depleted gas fields, and I would think that from your arguments on economic conservation that it would follow, it would be an axiom almost, that you should automatically develop any available fields of that kind to the maximum extent possible?

MR. J.J. McGRATH: That is correct.

MR. COMMISSIONER HARDY: But would you do it on conservation grounds?



MR. J.J. McGRATH: I think that we would do it on economic grounds too. Take the illustration of the Herscher Dome, for example, that is delivering about 400 million cubic feet a day. If the capacity was not available right close to the market, the Herscher Dome -- I forget the distance but it is something like 40 miles from Chicago, and I may be wrong on that, but it is relatively close to the City of Chicago, which is a tremendous market. Without that field the pipeline company serving Chicago would have to build practically an entirely new pipeline at considerable capital cost to deliver 400 million cubic feet a day from the fields in Texas or Kansas or wherever it might purchase it. So it has a definite economic benefit to the pipeline company, apart from the conservation aspect, which is a very important element too.



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MR. COMMISSIONER HARDY: What do you mean "on economic grounds"? For instance, the figures that were given us in Toronto a few days ago were to the effect that in Ontario the Union gas storage that has been rented by a gas distributing company of Ontario, the cost to them is 31 cents, I think it was, and that appears to be based on economics such as this, that the price range for interruptible gas is 30 cents lower than the price of firm gas, but then there is a much bigger differential in that, that 30 cents between interruptible and the price to the domestic consumer.

MR. J. J. McGRATH: When I say the economics I was then referring to the capital expenditure that would be required by a pipe line company to add additional facilities. Going back, if I may, to the illustration of the Chicago market which is served by the Natural Gas Pipe Line Company of America, they are proposing a loop to their pipe line system costing approximately \$185,000,000.00, new money, capital expenditure. If enough storage were available to provide the capacity that has opened up into the system by reason of the addition to the line, by storage at a cost of \$30,000,000.00 I think the benefit to the consumer is obvious in that it can cost much less to develop the storage than



it would be to loop the line. I do not know if I have made myself clear but - -

MR. COMMISSIONER HARDY: I see that all right and I think there is a point there that one of the difficulties is that the conditions under which you figure out your economics vary considerably. The distributing company in Ontario is not faced with building or looping lines, they were faced with the price and the quantity at which they buy the gas.

MR. J. J. McGRATH: Yes, but if they owned the storage - take Union for instance can purchase gas from Trans-Canada at a higher load factor and store the gas and that is beneficial to them, but in the United States, for instance, you have the question of your contract demand quantity and your billing demand units where distributors who enjoy a large heating market in the winter must provide capacity for the market rather than to build up a high billing demand which would increase their over-all cost and purchase gas, many of them manufacture gas or do what we call "peak shaving" and that could run pretty expensive sometimes, let us say \$1.00 per 1000 cubic feet whereas if they stored the gas it might cost 30 cents per 1000 cubic feet.

MR. COMMISSIONER HARDY: I wonder if Mr. Van Scoyoc could tell us if in his experience



the Federal Power Commission would force a distributing company to develop storage rather than to sell industrial interruptible to maintain the load factor.

MR. VAN SCOYOC: Normally they would not have jurisdiction over a distributor but they would have jurisdiction over a pipe line company. The Commission has not, you might say, forced somebody to put in a storage project but they certainly have encouraged it. One of the cases that comes to mind is the Trans-Continental Gas Line Corporation was certificated in 1948, the Commission required the company to make studies to see if they could not find storage projects near its market area which was around New York City, and these people spent quite a bit of money on geological investigations. This storage was to be in lieu of letting some of the distributors use gas under boilers. Now, it is only recently that there has been a large scale definitive project in connection with the Trans-Continental system, but the Commission has encouraged the development of storage very strongly. It could, of course, by its refusal to grant a certificate of convenience and necessity force a company to put on a storage project if they could find one, but it has not come to that point as yet.

MR. COMMISSIONER HARDY: There is one



other question, Mr. Van Scoyoc, on a different topic: Is there any precedent for the Federal Power Commission giving approval for gas transmission lines that run parallel to one another with gas in one pipe line running south and an adjacent line running north?

MR. VAN SCOYOC: I do not know of any major instances of that character, there may be particularly in the Appalachian area where you have a vast network of pipe lines where they may criss-cross and you have a situation where a Consolidated natural system transporting gas east and the Columbia system west, but not on the long distance lines from Texas up to the Appalachian area the movement is all in one direction.

MR. COMMISSIONER HARDY: Would the F.P.C. object to the parallel lines ipso facto? They would not, I take it, from what you say?

MR. VAN SCOYOC: I think you have to take each case individually, I do not think I can generalize on the thing. I have as I say approved projects of parallel lines, virtually parallel or where two pipe lines might serve the same market from the same general production areas but that does not happen very often.

MR. J. J. McGRATH: You have pipe lines, of course, in the producing areas where they may be passing each other, one taking gas to the West



Coast and the other taking it up north, but that is the only situation I know where that would occur except the Appalachian area.

MR. COMMISSIONER HARDY: Thank you, that is all I have.

THE CHAIRMAN: Mr. Van Scoyoc, does the F.P.C., in your experience, in considering an export permit for natural gas from the United States look into the question of the price at which that gas is going to be sold?

MR. VAN SCOYOC: It would not be a major consideration, I do not believe, in so far as issuance of the export licence. They would have knowledge of this but I do not believe that would be a point on which the granting or the withholding of the grant would rest.

THE CHAIRMAN: You do not think it would be a material factor that the Federal Power Commission would take into account in recommending whether an export licence be granted?

MR. VAN SCOYOC: No, I do not believe they could do that the way the Natural Gas Act is written.

MR. J. J. McGRATH: Mr. Chairman, I disagree with Mr. Van Scoyoc's interpretation of that somewhat. I think in my experience with the exportation cases that one of the factors that



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the Commission has gone into, at least the Commission staff so far as I know the Commission itself, has been the price of the gas. As I recall the Panhandle export, one of the points being made in that hearing was the fact that the export to Union was being made at a price, I believe it was somewhat more than what the distributors - some 120 per cent in that zone in Michigan where the gas was being distributed in that area.

THE CHAIRMAN: 150 per cent?

MR. McGRATH: 120 per cent. Also in the Niagara export by Tennessee the price also was considered at that time by the Commission so I am somewhat in disagreement with Mr. Van Scoyoc on that point.



THE CHAIRMAN: Well, would the Federal Power Commission have scrutinized the matter more carefully if the price had been 80 per cent?

MR. J.J. McGRATH: In my opinion, it would have.

THE CHAIRMAN: Would the Federal Power Commission in your opinion, in granting an import permit, look into the price at which the gas was sold?

MR. J.J. McGRATH: Yes, sir.

THE CHAIRMAN: And then, following on your theory, they would go back to the wellhead price.

MR. J.J. McGRATH: For the imported gas?

THE CHAIRMAN: Yes.

MR. J.J. McGRATH: I doubt it.

THE CHAIRMAN: They wouldn't worry about that?

MR. J.J. McGRATH: I am sure they would probably worry about it, but I think that they would give consideration only to the price that is charged at the border and as it relates to the other factors.

In the case of Trans-Canada, midwestern Trans-Canada did make a fairly complete showing at the FPC hearings on practically every phase of its operation.

THE CHAIRMAN: Would you regard that as



a profitable exercise of a waste of time and money?

MR. J.J. McGRATH: I think it is a very profitable exercise.

THE CHAIRMAN: If all those screenings had taken place in Canada, would not the Federal Power Commission accept the certificates of the Canadian authorities, or should they not? Would it not be better, from the point of view of export and import of natural gas between the two countries, if such were the case?

MR. J.J. McGRATH: I am not sure I understand your question. Your question was, if the Federal Power Commission took into account all these factors and considered them, then --

THE CHAIRMAN: No. Before an export permit is granted at the present time by the Dominion of Canada an export permit has to be granted by the province, let us say the Province of Alberta; it doesn't apply to all. All those factors that the Federal Power Commission in its own way goes into as to whether they will grant an import permit has already been considered by all the competent authorities in Canada. Do you not consider that the Federal Power Commission going into all these matters again is a waste of time and money?

MR. J.J. McGRATH: I think it would all depend on each individual case, but my first reaction is that the Commission would not go into



all of the matters again.

THE CHAIRMAN: But you have just told me they did.

MR. J.J. McGRATH: They did in the Trans-Canada case, because the government had not acted upon the export permit, and in the original case involving the importation of natural gas from Canada where Northern Natural was going to be the importee, in the case before the Federal Power Commission various motions to dismiss the application were made, and the Commission denied the motion to dismiss. But a very important element was a submission by Commissioner Smith in which he delineated various points the applicant should show, including the showing that Trans-Canada could carry out the service that it was proposing to render to Northern Natural, and the importation of natural gas into the United States would be compatible or consistent with the public interest in the United States. At that time the Canadian Government had not acted upon an import permit, and you recall that Trans-Canada was then in the embryonic stage.

THE CHAIRMAN: Don't let's dismiss it as quickly as that. Trans-Canada held a contract and they also held a letter from the responsible minister in the government.

MR. J.J. McGRATH: I am relying on my memory there, but not at the time that the Northern



Natural export was proposed. I believe, sir, you are referring to the letter of the Honourable C.D. Howe, but that was the Midwestern Transmission Company in Tennessee two years later.

THE CHAIRMAN: Let's get back to Westcoast. They had to go through the Federal Power Commission in pretty great detail even though ~~they~~ had an export permit from the Province of Alberta and the Dominion of Canada.

MR. J.J. McGRATH: Yes.

THE CHAIRMAN: So everything that the Provincial authorities did and everything that the Canadian Government did was again gone into in Washington before the Federal Power Commission.

MR. J.J. McGRATH: Yes. In the first case, the Westcoast Transmission Company also proposed a transmission company in the United States as a direct tie-in.

THE CHAIRMAN: But that would have nothing to do with what went on in Canada.

MR. J.J. McGRATH: No, but it did require the Westcoast Transmission Company in the United States to make a complete showing, and the showing that was made -- I don't know whether it was required by Westcoast Transmission, but the powers or the management of Westcoast in the United States saw fit to put on a completely full-blown case because they felt that



was the best thing to do to convince the Commission that their operation was better than Northwest. Now, neither Trans-Canada nor Mid-Western were under any obligation, as far as I know, by the Federal Power Commission to come forward with a complete case from top to bottom, that is engineering, design, rate, facilities and so forth, but in my own opinion I consider it was a very wise thing for them to do, and I think the Federal Power Commission is much better off by having that information for evaluating the competitive proposals.

THE CHAIRMAN: Do you think, having regard to your practice before the Commission, that the export and import of natural gas as one source of energy between our two countries could be facilitated if any one of those two companies were to accept examination with respect to one another in the matter of jurisdiction?

MR. J.J. McGRATH: To answer your question directly, yes, sir.

THE CHAIRMAN: So you would agree with my original premise, that what happens is a waste of time and money.

MR. J.J. McGRATH: No, I don't agree with the original premise. Your question was whether it wouldn't expedite it. I said it would, but I still think the Federal Power Commission is better



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able to judge the merits of the Mid-Western importation proposal by reason of having Trans-Canada's proposal spread before them.

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THE CHAIRMAN: Yes, so that you think the F.P.C. is better able to judge the merits of Canada's exportation as to whether or not the gas is available and so forth and so on?

MR. J. J. McGRATH: No sir, I do not think they are trespassing on that ground in these particular situations that we have been discussing. One of the peculiarities of each one of these cases has been that there have been computed applications filed by United States companies, and the Commission had the obligation to determine which program is in the best interests of the United States and the consumers of gas in the United States.

THE CHAIRMAN: There would be no question about that.

MR. J. J. McGRATH: One of the factors which comes into it is the ability of showing what ability the various pipe line companies did have shall we say to deliver the goods, and one of the factors is the ability of Trans-Canada to deliver the gas to mid-western.

THE CHAIRMAN: I would think that they could have accepted the certificate of the Government authorities in Canada on that point. That is really basic in my thinking.

MR. J. J. McGRATH: Yes sir. Well they might very well do that sir. I don't know. They



very well could have done that; all I am saying is I think the Commission is better able to judge the matter by having this information spread before it. Whether it would require it or not is another thing.

MR. J. J. McGRATH: Mr. Chairman, if I might say in a proceeding I was in, which was the importation of natural gas from Mexico, the situation was that Texas Eastern Transmission Company was going to purchase the gas from the Government, or at least a Government owned operation in Mexico. The only presentation that was made was submission of the contract with Pemex. No representative from Pemex appeared in the proceedings whatsoever. Admittedly we mentioned that in opposition that we thought they should come forth. They did not come forth. However, the Commission did allow the importation.

MR. J. J. McGRATH: In other words, it did accept the permit from the Government of Mexico without any showing as to the ability to deliver the gas.

MR. FRAWLEY: Do you think they would be more likely to accept the certificate of Mexico than the certificate of Alberta?

MR. J. J. McGRATH: I am sure they have great respect for Alberta.

MR. HALL: Mr. Frawley, the



Federal Power Commission does many strange things in our view.

MR. FRAWLEY: That is about the strangest.

THE CHAIRMAN: Well it is a genuine desire to see if certain things cannot be done to facilitate, rather than any matter of criticism that I raised my question.

MR. J. J. McGRATH: Certainly sir.

THE CHAIRMAN: Thank you very much Mr. Hall for coming before us today, you and Mr. Van Scoyoc and Mr. McGrath, both Mr. McGraths.

We appreciate very well that you came to Calgary in February, again in May, and you were very co-operative at that time. We postponed you until today in Montreal, and I can assure you that the submission which you have presented, you and your colleagues here, is well worth while from the point of view of the Commission. Very instructive and I am sure will be most helpful to us.

MR. HALL: Thank you. On behalf of the group here I wish to express appreciation for the courtesy and hospitality. I would like to close by making this observation: I am not embarrassed by our seeming failure to have the perfect answer to the very astute questions that have been raised by the Commission, by Mr.



Pattillo and Mr. Frawley. It only highlights our problems rather than puts us in an embarrassing position.

It leads me to this conclusion; one of the great handicaps on the American side is the absence of any legislative history at the time of the Natural Gas Act enactment. Failure to consider these problems then, I feel, contribute to the greatest measure and extent to our present dilemma. I feel that by raising these questions here perhaps others wiser than we will see the solution. Certainly any expression on the part of the Borden Commission in the form of recommendation or in any legislative policy that might be developed that would infer recognition of some of the facts of natural gas life in the competitive sense that we have had to contend with, would in our opinion be of immeasurable value to your whole fuel economy in the future, and it is with that thought in mind that we came up here. Without the thought of an adversary attitude whatsoever; even permitted our all too independent private consultant to have free swing.

We thank you very much.

THE CHAIRMAN: Thank you very much indeed. Gentlemen, the hearing of the Commission is adjourned until tomorrow morning in this Council Chamber at 10 a.m.

--- Whereupon the proceedings adjourned at 4.35 p.m. to be resumed at 10.00 a.m. on Tuesday, 15th of July, 1958.

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